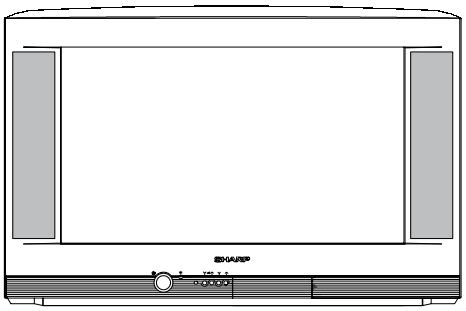
SHARP®

# SERVICE MANUAL

SE0032JW73E01
Issued: 20th Dec. 2002

## GA-20 CHASSIS

PAL B/G, I / SECAM L/L', B/G, D/K SYSTEM COLOUR TELEVISION



## MODEL
## 32JW-73E ES/SE

In the interests of user safety (required by safety regulations in some countries) the set should restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.

## SERVICE MANUAL UPDATE LOG SHEET

| Technical Report No.<br>Technical Bulletin No. | Cause / Solution | Part No. | Page No. | Application<br>Data /Serial No. |
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Use this page to keep any special servicing information as Technical Report (Bulletin), Technical Information, etc.
If only part number changes are required, just change part number directly the part number in the Parts Listing Section.
If you need more information, please refer to the Technical Report (Bulletin).

# ELECTRICAL SPECIFICATIONS

•Power Input ..... 220V-240 Volts AC 50Hz

•Power Consumption
Normal Operation (Method IEC60107) ..... 85W
Stand-by Operation ..... 3W

•Audio Power Output Rating (MPO) / Impedance
Internal Left Speaker ..... 10W, 7Ω
Internal Right Speaker ..... 10W, 7Ω

•Speakers
Left / Right ..... 12 x 6cm

•Convergence (Maximum Misconvergence)
Static (Centre) between any two colours ... 0.08 cm
Dynamic after static equals zero
Within 10cm (4") circle ..... 0.12cm
10-25cm (4-10" ) circle ..... 0.20 cm
Everywhere else ..... 0.28 cm

•Focus ..... High Bi-Potential Electrostatic

•Sweep Deflection ..... Magnetic

•Picture Intermediate frequency
L' ..... 33.9MHz
L, B/G, D/K,I ..... 38.9MHz

•Sound Carrier Trap
L' ..... 40.4MHz
L, D/K ..... 32.4MHz
B/G ..... 33.4MHz
I ..... 32.9MHz

•Adjacent Sound Carrier Trap
L' ..... 32.4MHz
L, D/K, B/G ..... 40.4MHz
I ..... 40.9MHz

•Adjacent Picture Carrier Trap
L' ..... 41.9MHz
L, D/K, ..... 30.9MHz
B/G ..... 31.9MHz

•Aerial Input Impedance
VHF/UHF ..... 75 ohm Unbalanced

•Tuning Ranges ..... 45.75MHz thru 855.25 MHz
VHF: IR A - J / S1 - S41 CH (Hiperband)
UHF: I21 - I69 CH
CATV Special Channels

•White Level
Set brightness control to get total picture tube cathode current of 600 μA under no signal condition. Maximum necessary correction of each picture tube cathode current to get 8550 degrees K+1 MPCD screen temperature should not exceed 15% of its original value.

**X=0.290 ± 0.015 Y=0.300 ± 0.015**

Specifications are subject to change without prior notice.

**MODEL DESTINATION (Operation Manual languages).**

**32JW-73E**: Deutsch, Français, Nederlands.
**32JW-73EES**: Español, Português.
**32JW-73ESE**: Dansk, English, Norsk, Suomi, Svenska.

**WARNING**

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

# IMPORTANT SERVICING NOTES

Only qualified service personnel are allowed to carry out maintenance and repair of this receiver.

## Servicing of High Voltage System and CRT

It is important that the static charge is removed from the high voltage system when carrying out work on the receiver. This can be achieved by connecting a 10K resistor (with a suitably insulated lead) from the CRT cavity connector to the CRT ground tag. This must be carried out with the AC supply disconnected from the receiver.

Note the following:

- The CRT in this receiver employs Integral Implosion Protection.
- If the CRT has to be changed it MUST be replaced with the correct type for continued safe working.
- DO NOT lift the CRT by its neck.
- When handing the CRT, ensure that shatterproof goggles are worn.
- Ensure that the CRT is discharge before handling.

## X-Ray

This receiver is designed to keep any x-ray emission to an absolute minimum. Some fault conditions and servicing procedures may produce potentially hazardous x-ray radiation levels. This is a problem when in close proximity to the receiver for long periods of time. To reduce any risks associated with this, please observe the following precautions:

1. When undertaking any servicing on this chassis, DO NOT increase the EHT to more than 32.5 KV, (at a instantaneous beam current of 1500μA).

2. Ensure that during normal operation the EHT does not exceed 30.0 KV±1.5KV (at a beam current of 1650μA). This level has been preset in the factory. Always check that this level has not been exceeded after carrying out any repair on the receiver.

3. DO NOT replace the CRT with any other type than that specified in the parts listing as this may cause excessive x-ray radiation.

## Before returning the receiver to the customer

In addition to the above checks, the following should also be carried out before returning the receiver to the customer.

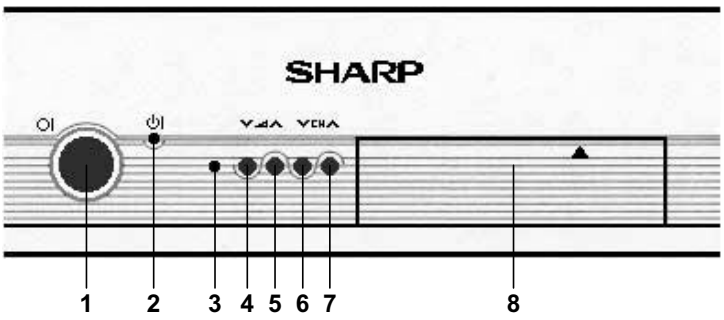
1. Inspect all the leads to ensure that they are dressed correctly and that they are not obstructed or pinched by any other parts.

2. Ensure that all protective devices are in good condition. These will include nonmetallic control knobs, insulating fish papers, cabinets backs, compartment covers or shields, mechanical insulators, etc.

# CONTROLS & TERMINALS

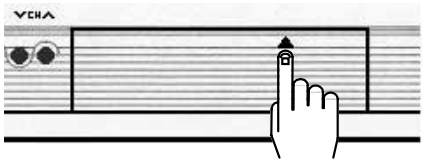
## ■ FRONT TV

1. Main power button
2. Power indicator
3. Remote control sensor
4. Volume DOWN button
5. Volume UP button
6. Channel DOWN button
7. Channel UP button
8. Door



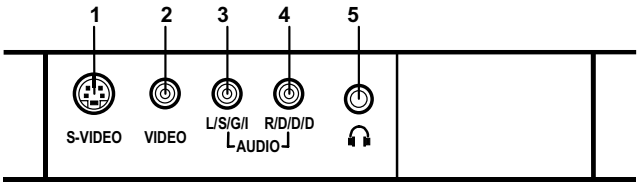

**HOW TO OPEN THE DOOR**

Press the top of the door, opening it slightly
hook your finger inside and pull open.



### Behind the door

1. S-VIDEO input terminal
2. VIDEO input terminal (PAL/SECAM/NTSC)
3. AUDIO input terminal (left)
4. AUDIO input terminal (right)
5. Headphone jack (3.5mm / 16~600 ohms)



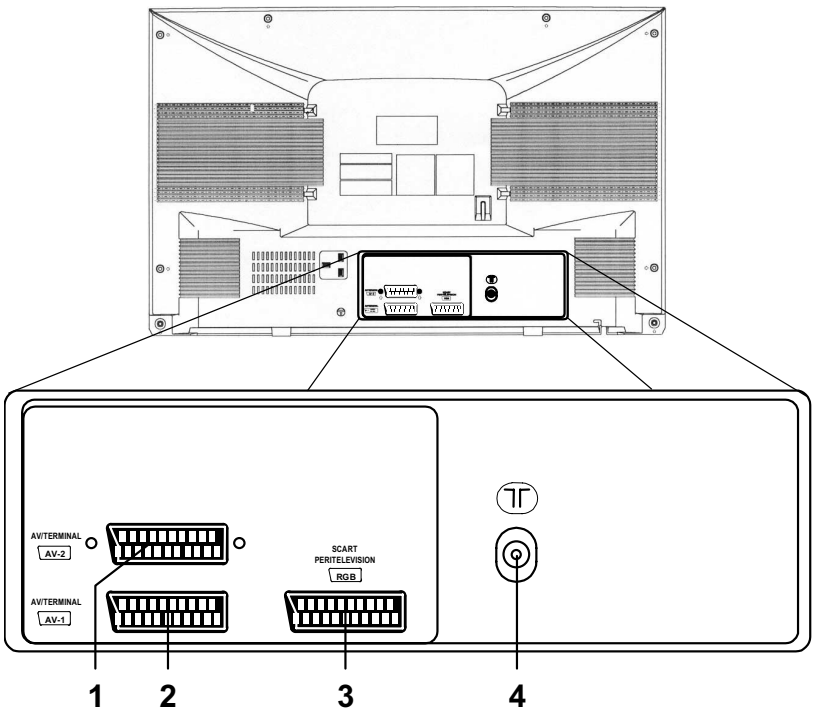

## ■ REAR TV

### 21-pin In/Out

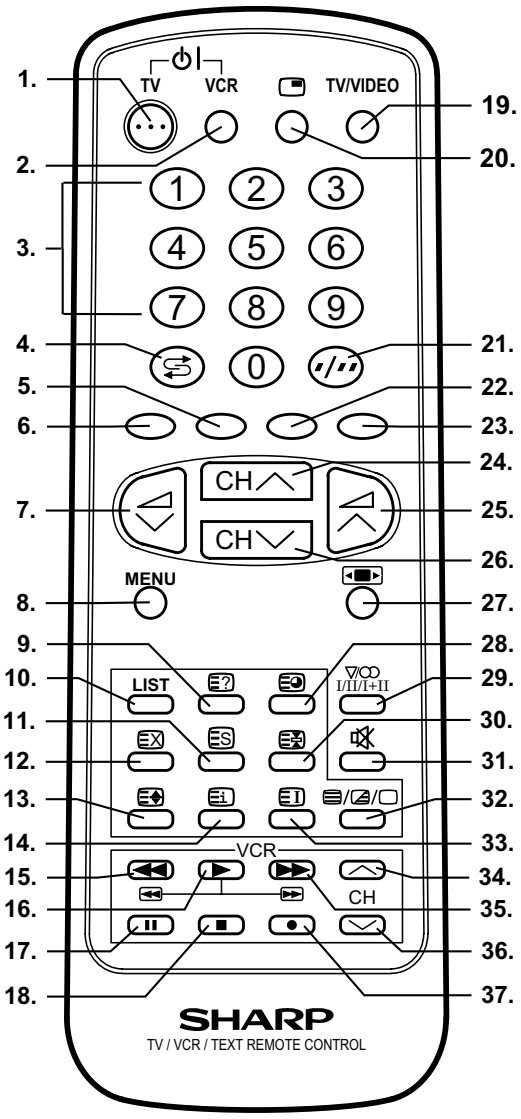
1. 21-pin Audio/Video (AV-2)
   With PAL/SECAM/NTSC Video Input
2. 21-pin Audio/Video (AV-1)
   With PAL/SECAM/NTSC/S-Video Input
3. 21-pin Euro SCART (RGB)
   With PAL/SECAM/NTSC Video Input

### RF Input

4. Aerial terminal



# REMOTE CONTROL




| | | |
|---|---|---|
| **TV** | **1.** | Stand-by ON/OFF switch (TV) |
| **Video** | **2.** | Power ON / OFF switch (VCR) |
| **TV** | **3.** | Digit buttons 0 ~ 9 |
| | **4.** | Flashback button |
| **Teletext** | **5.** | Colour button (green) |
| | **6.** | Colour button (red) |
| **TV** | **7.** | Volume DOWN/Cursor control LEFT |
| | **8.** | Menu button |
| **Teletext** | **9.** | Reveal button |
| | **10.** | List selector |
| | **11.** | Store button |
| | **12.** | Cancel button |
| | **13.** | Half page button |
| | **14.** | Cursor button |
| **TV** | **14.** | Sub-titles button |
| **Video** | **15.** | Rewind/picture search/reverse |
| | **16.** | Play button |
| | **17.** | Pause / Still button |
| | **18.** | Stop button |
| **TV** | **19.** | TV / VIDEO selector |
| | **20.** | Call button |
| | **21.** | Single/Double entry |
| **Teletext** | **22.** | Colour button (yellow) |
| | **23.** | Colour button (cyan) |
| **TV** | **24.** | Channel UP/Cursor control UP |
| | **25.** | Volume UP/Cursor control RIGHT |
| | **26.** | Channel DOWN/Cursor control DOWN |
| | **27.** | Wide Mode selector |
| **TV /Teletext** | **28.** | Time button |
| **TV** | **29.** | Sound mode selector |
| **Teletext** | **30.** | Hold button |
| **TV** | **31.** | Sound Mute button |
| **Teletext** | **32.** | Text/Mix/Picture button |
| | **33.** | Index button |
| **Video** | **34.** | Channel Up selector |
| | **35.** | Fast forward/picture search/forward |
| | **36.** | Channel Down selector |
| | **37.** | Record button |

# ADJUSTMENT PROCEDURES

All adjustments to this chassis, except for focus, are carried out in the Service Mode.

## Service Mode

The Service Mode is provided to enable the engineer to correctly set up the receiver to the CRT fitted in the set. Note that these adjustments may vary from one receiver to another.

To enter the Service Mode, carry out the following procedure.

1. Connect a test pattern to the antenna terminal.
2. Tune the receiver to this signal.
3. Turn the receiver off using the mains switch.
4. Press volume down and channel up buttons on the front of the receiver at the same time.
5. Keeping these buttons pressed, turn the mains on.
6. When the set starts up it will be in Service Mode.
7. Release the two buttons.

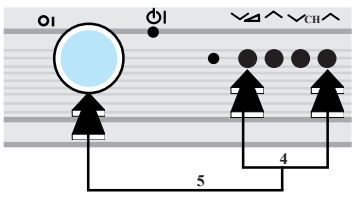



**Figure 1**

- Use the channel up and down buttons to move between the options.
- Use the volume control buttons to change the data.
- To store the data, use the stand-by button on the remote control.
- To exit the Service Mode, turn the receiver off using the mains switch.

When the Service Mode is entered the following On Screen Display appears

SERVICE SOFTWARE **–**x**
SW on: XXXX SW off: XXXX Hours ON: XXXX

The figures displayed in the "XXXX" locations are hexadecimal representations of the number of times that particular function has been executed. For example if the hexadecimal number displayed after "SW on" was 0E4A, this would correspond to the receiver being turned on 3658 times.
The figure displayed in the " **–**x** " location is the EPROM version.

## Adjustment menu:

The following adjustments can be carried out in the Service Mode.

01. Horizontal Shift
02. East West Width
03. Pin Phase
04. Pin Amp (*Amplitude*)
05. Corner Amplitude
06. Corner Symmetry
07. Vertical Linearity
08. Vertical Angle
09. Vertical Bow
10. Vertical Amplitude
11. S Correction
12. Vertical Shift
13. Red Gain
14. Green Gain
15. Blue Gain
16. Red Cut Off
17. Green Cut Off
18. Blue Cut Off
19. Alter NVM Pag (*Page*)
20. Alter NVM Pos (*Position*)
21. Alter NVM Val (*Value*)
22. Teletext Mix Mode Contrast
23. Teletext Contrast
24. OSD Contrast
25. DVCO Adjustment (Only PAL)
26. DVCO Adjustment (Only NTSC)
27. AGC Adjustment *(B/G or L depending on the receiving signal)*
28. Auto Installation On/Off

When in the Service Mode it is possible to access certain functions by using the teletext keys as below.

- By pressing the Blue button each adjustment can be directly accessed via the remote control. Referring to the list above, press the Blue button followed by the adjustment number, this will directly access the selected adjustment. If any number above 29 is selected, the set will revert to the Service Mode entry page. To access a number less than 10, use the 0 key first, i.e. 02.
- Press the Yellow button to go straight to the AGC adjustment.
- Press the Green button once to enter "FACTORY VOLUME" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the Green button twice to enter "FACTORY BALANCE" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the Green button three times to enter "FACTORY BASS" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the Green button four times to enter "FACTORY TREBLE" level. Use volume control keys to change the setting. The original value will be recovered after resetting the TV set.
- Press the Red button once to enter "FACTORY CONTRAST" level. Use volume control keys to change the setting. The adjustment is stored automatically.
- Press the Red button twice to enter "FACTORY BRIGHTNESS" level. Use volume control keys to change the setting. The adjustment is stored automatically.
- Press the Red button three times to enter "FACTORY COLOUR" level. Use volume control keys to change the setting. The adjustment is stored automatically.
- If buttons 0 through 9 are pressed, the set will automatically go to that program number.
- By pressing the Menu button, the unit will normalise Picture and Audio settings. The Auto Installation is then turned "on".

Note that the receiver should be set to FULL MODE before carrying out any geometry adjustments. This can be achieved by pressing the widescreen mode button on the remote control until FULL MODE appears on the OSD. This can only be done out of the Service Mode.

The following geometry adjustments can be carried out. Detailed instructions on how to execute these are given on the following pages.

**Horizontal**

- Horizontal Shift
- E-W Width
- Pin Phase
- Pin Amp
- Corner Amplitude
- Corner Symmetry

**Vertical**

- Vertical Amplitude
- Vertical Shift
- Vertical Bow
- Vertical Angle
- S Correction
- Vertical Linearity

Just in case the TV set requires a full geometry adjustment, please proceed first with Vertical according to the above order, and after that, adjust Horizontal according to the above order.

**Horizontal Shift**
Adjust the Horizontal Shift so that the picture is centred.
The effect of this adjustment is shown in figure 2.

- When the volume up button is pressed, the picture moves to the right.
- When the volume down button is pressed, the picture moves to the left.
- Press the stand-by button on the remote control to store.

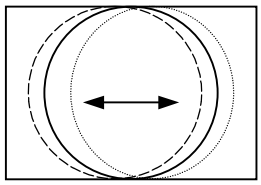


**Figure 2**

**E-W Width**
Adjust the E-W Width so that 8% over-scan is achieved.
The effect of this adjustment is shown in figure 3.

- When the volume up button is pressed, horizontal scanning decreases.
- When the volume down button is pressed, horizontal scanning increases.
- Press the stand-by button on the remote control to store.

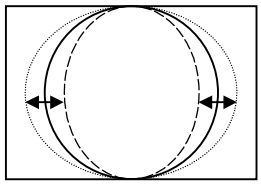


**Figure 3**

**Pin Phase**
Adjust the Pin Phase so that the picture is symmetrical top and bottom.
The effect of this adjustment is shown in figure 4.

- When the volume up button is pressed, side pincushion changes.
- When the volume down button is pressed, side pincushion changes.
- Press the stand-by button on the remote control to store.

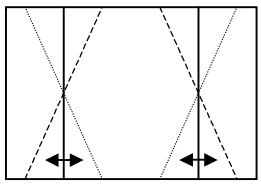


**Figure 4**

**Pin Amp**
Adjust the Pin Amp so that the picture is centred.
The effect of this adjustment is shown in figure 5.

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

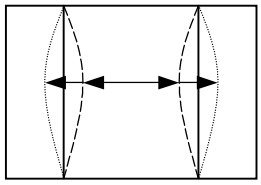


**Figure 5**

**Corner Amplitude**
Adjust the Corner Amplitude so that the picture is centred.
The effect of this adjustment is shown in figure 6.
Note: This adjustment affects to upper and lower sides.

- When the volume up button is pressed, side pincushion changes from pincushion to barrel shape.
- When the volume down button is pressed, side pincushion changes from barrel shape to pincushion.
- Press the stand-by button on the remote control to store.

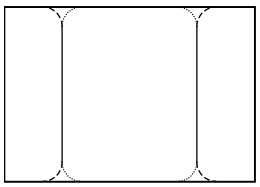


Figure 6

**Corner Symmetry**
Adjust the Corner Symmetry so that the picture is centred.
The effect of this adjustment is shown in figure 7.
Note: This adjustment affects to upper and lower sides.

- When the volume up button is pressed, side pincushion changes from barrel shape to pincushion.
- When the volume down button is pressed, side pincushion changes from pincushion to barrel shape.
- Press the stand-by button on the remote control to store.

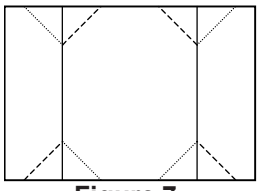


Figure 7

**Vertical Linearity**
Adjust the Vertical Linearity so that the upper and lower parts of the picture are symmetrical.
The effect of this adjustment is shown in figure 8.

- When the volume up button is pressed, the upper picture scanning decreases and the lower picture scanning increases.
- When the volume down button is pressed, the upper picture scanning increases and the lower picture scanning decreases.
- Press the stand-by button on the remote control to store.

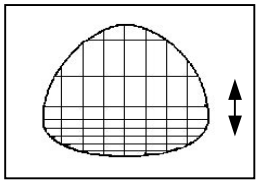


Figure 8

**Vertical Angle**
Adjust the Vertical Angle so that the picture is centred.
The effect of this adjustment is shown in figure 9.

- When the volume up button is pressed, the vertical angle changes to right.
- When the volume down button is pressed, the vertical angle changes to left.
- Press the stand-by button on the remote control to store.

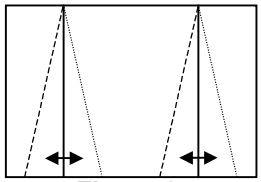


Figure 9

**Vertical Bow**
Adjust the Vertical Bow so that the picture is centred.
The effect of this adjustment is shown in figure 10.

- When the volume up button is pressed, the vertical bow changes to right.
- When the volume down button is pressed, the vertical bow changes to left.
- Press the stand-by button on the remote control to store.

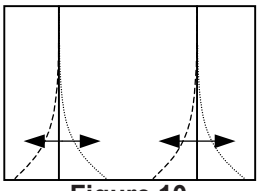


Figure 10

**Vertical Amplitude**
Adjust the Vertical Amplitude so that 8% over-scan is achieved.
The effect of this adjustment is shown in figure 11.

- When the volume up button is pressed, the vertical size of the picture increases.
- When the volume down button is pressed, the vertical size of the picture decreases.
- Press the stand-by button on the remote control to store.

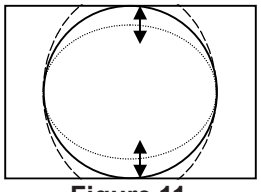


Figure 11

**S Correction**

Adjust the S Correction so that the picture symmetrical between the top, centre and bottom.
The effect of this adjustment is shown in figure 12.

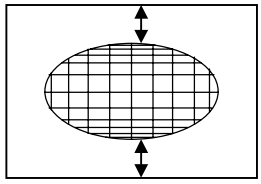


**Figure 12**

- When the volume up button is pressed, the top and bottom scanning increases and the centre scanning decreases.
- When the volume down button is pressed the top and bottom scanning decreases and the centre scanning increases.
- Press the stand-by button on the remote control to store.

**Vertical Shift**

Adjust the Vertical Shift so that the picture is centred.
The effect of this adjustment is shown in figure 13.

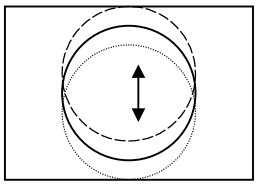


**Figure 13**

- When the volume up button is pressed, the picture moves down.
- When the volume down button is pressed, the picture moves up.
- Press the stand-by button on the remote control to store.

**Colour Adjustments**

The following adjustments should only be carried out when the CRT or IC850 are replaced.

**G2 (screen), R-G-B Cut Off and Gain Adjustments**

**1. Follow the procedure below to set the G2**

1.1 Tune the set to the output of a signal generator (monoscope pattern).
1.2 In the user menu, set contrast to 80/100 and brightness to 40/100 (TV normalized).
1.3 Select FULL MODE.
1.4 Enter the Service Mode.
1.5 Select RED GAIN in Service Mode.
1.6 Adjust SCREEN VR so that the OSD value (indicated on Figure 14) reaches 50h ± 8h.

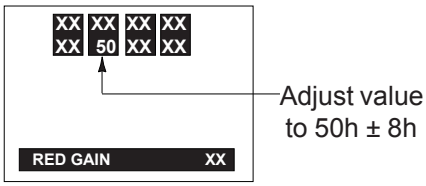



**Figure 14**

**2. Follow the procedure below to set the Cut Off.**

2.1 Adjust G2.
2.2 Tune a white pattern.
2.3 Adjust colour to minimum.
2.4 Position colorimeter in the centre of screen.
2.5 Adjust brightness and contrast to obtain a luminance of ≈ 3 NITS.
2.6 Set the RED CUT OFF to 32.
2.7 Operate in Service Mode and select location GREEN CUT OFF and BLUE CUT OFF, to obtain colour coordinates:

X=0.290 ± 0.015 Y=0.300 ± 0.015

To increase press volume-up button and to decrease press volume down button.

GREEN CUT OFF alter «Y» coordinate.
BLUE CUT OFF alter «X» and «Y» coordinate.

**3. Follow the procedure below to set the GAIN.**

3.1 Using brightness and contrast buttons, select a luminance of ≈100 NITS.
3.2 Set the RED GAIN to 50.

3.3 Operate in Service Mode and select location GREEN GAIN and BLUE GAIN, to obtain colour coordinates:

X=0.290 ± 0.015 Y=0.300 ± 0.015

To increase press volume-up button and to decrease press volume down button.

GREEN GAIN alter «Y» coordinate.
BLUE GAIN alter «X» and «Y» coordinate.

3.4 Exit Service Mode and check colour coordinates «X» and «Y» at 3 and 100 NITS. It may be necessary to repeat procedure 2 and 3 of Colour Adjustments.

**R-G-B Cut Off and Gain Adjustments (alternative method).**

In the event off a Colorimeter not being available, please follow the following procedures to obtain correct and Grey scale settings (R-G-B Cut Off and Gain).

1. In the user menu, set the picture levels to the FACTORY settings (normalised).
2. Enter the Service Mode.
3. Adjust the G2 as in the previous page procedure.
4. Set the 50, 51, 52, 53, 54 and 55 NVM positions on page 00 from the original value to 80. Store each location by pressing the stand-by button on the remote control.
5. Adjust grey scale as follows.
   5.1 Select a grey scale signal, then set the Red Cut-off level to 32 and the Red-Gain to 50.
   5.2 Leave the Red Cut-off and Gain as above and adjust Green and Blue Cut-off and Gain to achieve correct grey scale tracking. As with all grey scale adjustments it will be necessary to readjust the settings to achieve good tracking.

   Note: The data to be adjusted is contained at the bottom right corner of the picture. See Figure 15.

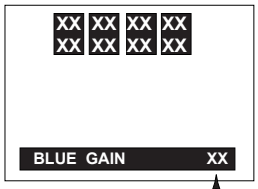


**Figure 15**

**Changing NVM Data**

To change the data contained within the Non Volatile Memory, it is necessary to first select the page the data is stored in, then the position and finally to change the data itself. The procedure below outlines this process.

1. Press the channel up/down buttons and ALTER NVM PAG appears, use the volume up/down buttons to change this data (it is shown in hexadecimal format).
2. Press the channel up button and ALTER NVM POS appears, use the volume up/down buttons to change this data (it is shown in hexadecimal format).
3. Press the channel up button and ALTER NVM VAL appears, use the volume up/down buttons to change this data (it is shown in hexadecimal format).
4. Once this data has been set, press the stand-by button to store.
5. If another NVM value has to be changed, use the channel down button to select the page or position and repeat as necessary.

**Note: DO NOT** change any NVM data, unless you have been advised to do so by a Sharp representative. If data is incorrectly changed, serious damage may occur to the receiver.

**Contrast Adjustments**

Three types of contrast levels can be varied as listed below:
- TELETEXT MIX MODE CONTRAST
- TELETEXT CONTRAST
- OSD CONTRAST

Use the volume up/down buttons to adjust to a suitable level, then. It is not necessary to press the stand-by button to store, **data are memorized by exiting the Service Mode.**

**DVCO Adjustment (PAL)**
Carry out the DVCO Adjustment (PAL) as shown below:
1. Receive a Philips pattern signal.
2. While in the DVCO ADJUSTMENT (PAL) menu, press the stand-by button.
3. The adjustment will be carried out automatically and stored.

**DVCO Adjustment (NTSC)**
No adjustment required.

**AGC Adjustment** (B/G)
To correctly align the “B/G” Automatic Gain Control, follow the procedure outlined below:
1. Tune the set into a pattern generator on CH E12 (B/G).
2. Adjust the signal strength of the pattern generator to 59dB/mV (75W).
3. Enter the Service Mode.
4. Enter the AGC Adjustment menu (although it only appears on screen “AGC Adjustment” you are in the “B/G” one).
5. Press the stand-by button on the remote control.
6. The adjustment will be carried out and stored automatically.

**AGC Adjustment** (L)
To correctly align the “L” Automatic Gain Control, follow the procedure outlined below:
1. Tune the set into a pattern generator on CH F10 (L).
2. Adjust the signal strength of the pattern generator to 59dB/mV (75W).
3. Enter the Service Mode.
4. Enter the AGC Adjustment menu (although it only appears on screen “AGC Adjustment” you are in the “L” one).
5. Press the stand-by button on the remote control.
6. The adjustment will be carried out and stored automatically.

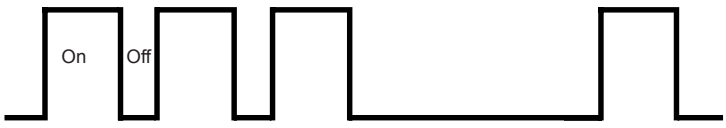
**Auto Installation On/Off**
To return the receiver to the original Auto Installation mode, using the volume up or down button, set the Auto Installation On/Off to On. This setting is automatically stored and when the receiver is turned on the next time it will start up in Auto Installation mode.

## LED FLASHING CODES

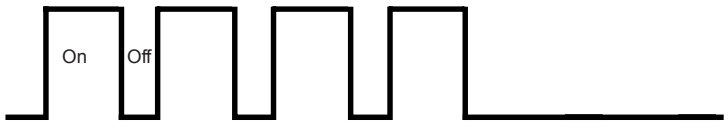
If the TV set does not work and the power indicator is flashing, follow the sequence according to the information below, as a guide to fault finding.

1. **Unable to read or write into NVM:** 66% ON, 33% OFF twice and OFF for a second.

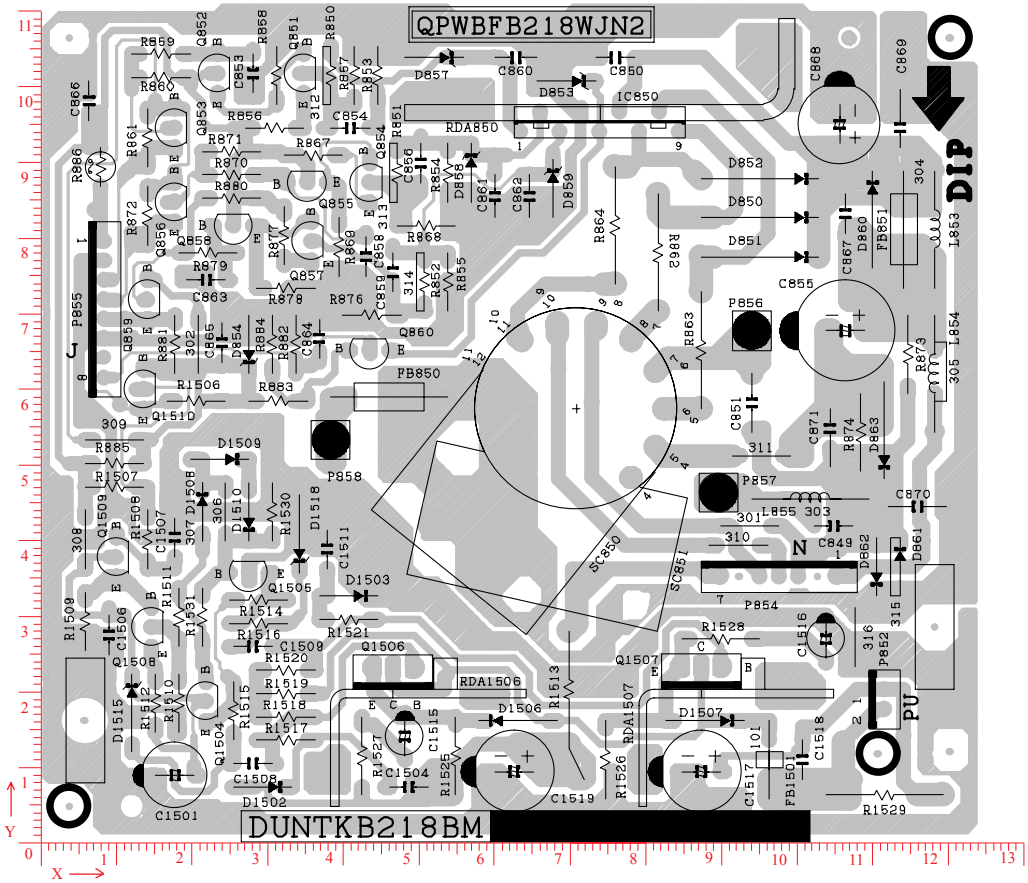
2. **MSP failure:** 66% ON, 33% OFF for three times and OFF for a second.



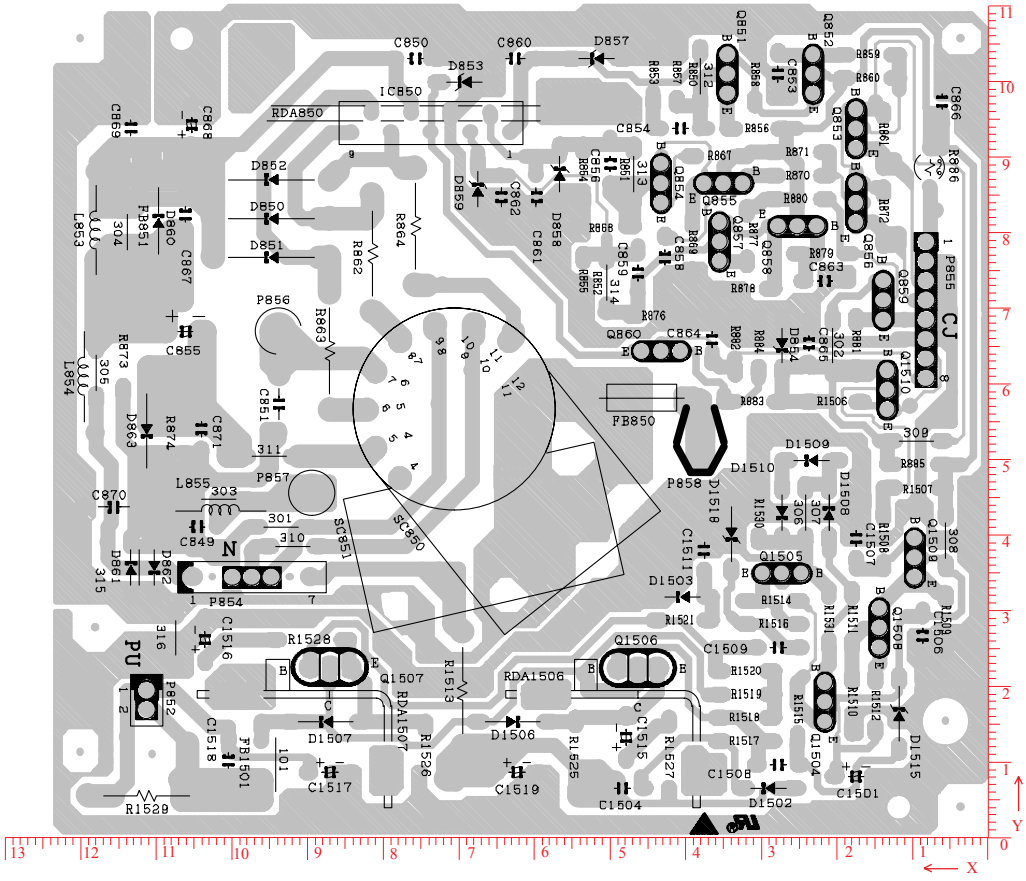

3. **VCT failure:** 66% ON, 33% OFF for four times and OFF for a second.



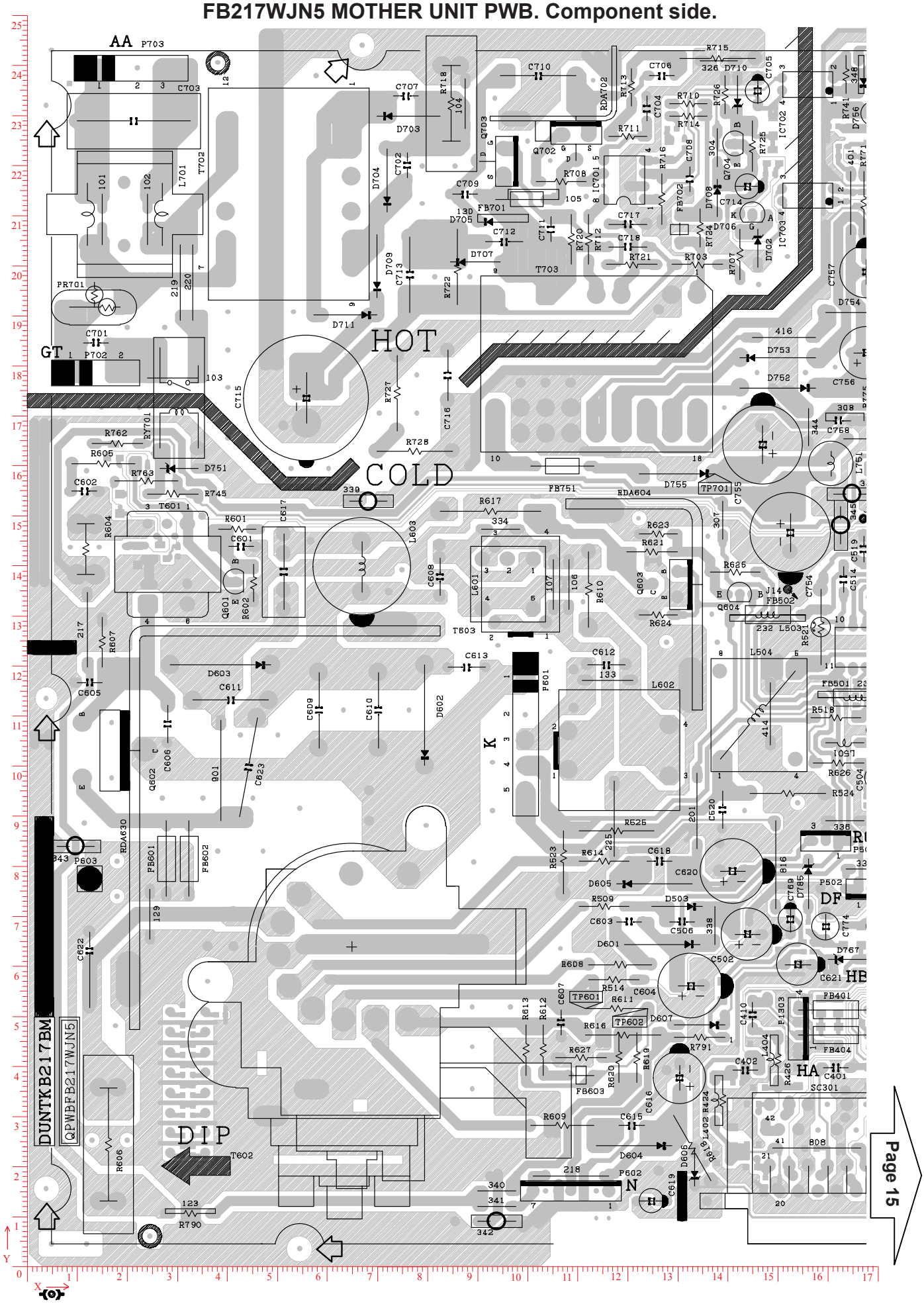
## FB218WJN2 CRT UNIT PWB. Component side.



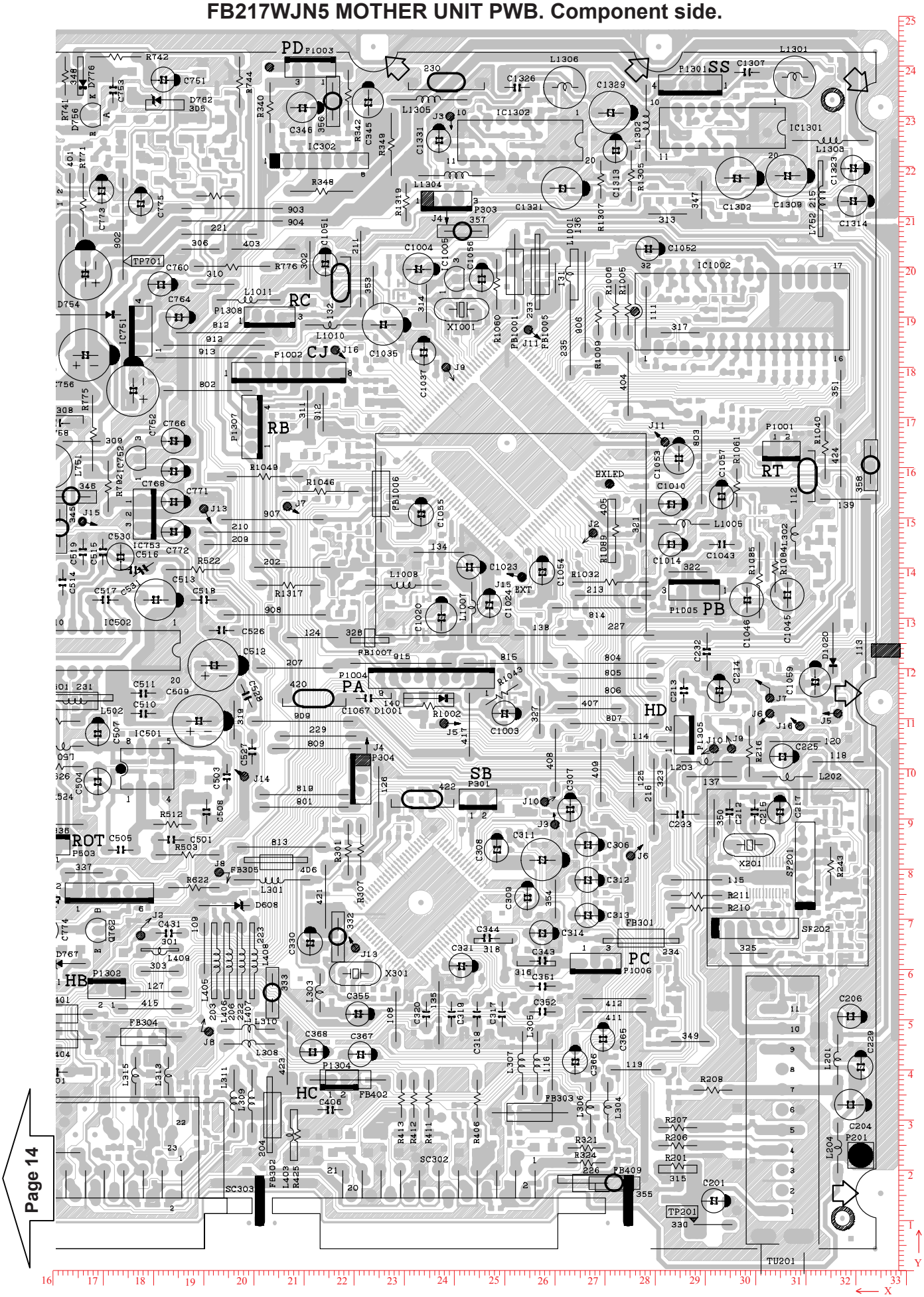

## FB218WJN2 CRT UNIT PWB. Copper side.



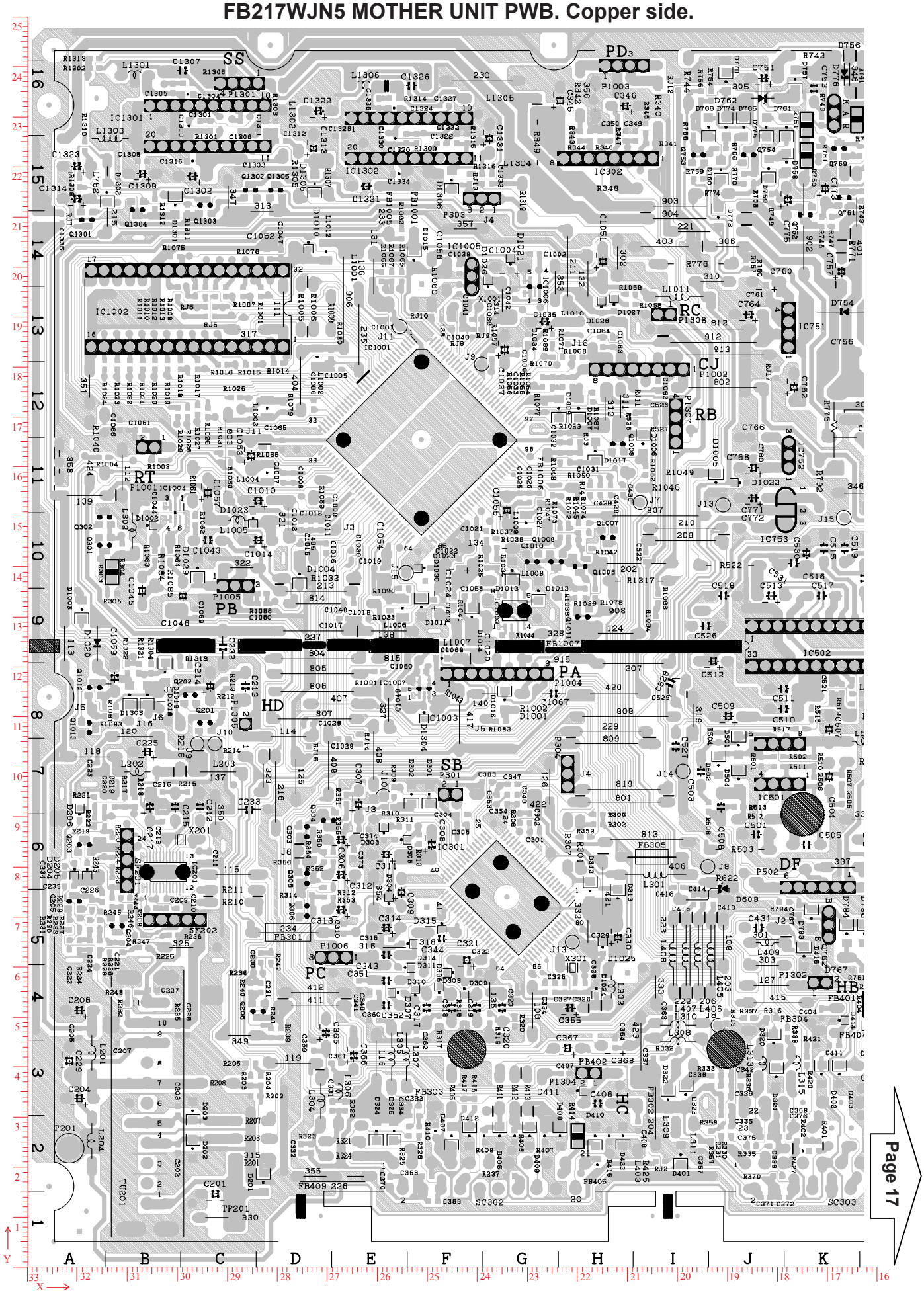
## FB217WJN5 MOTHER UNIT PWB. Component side.



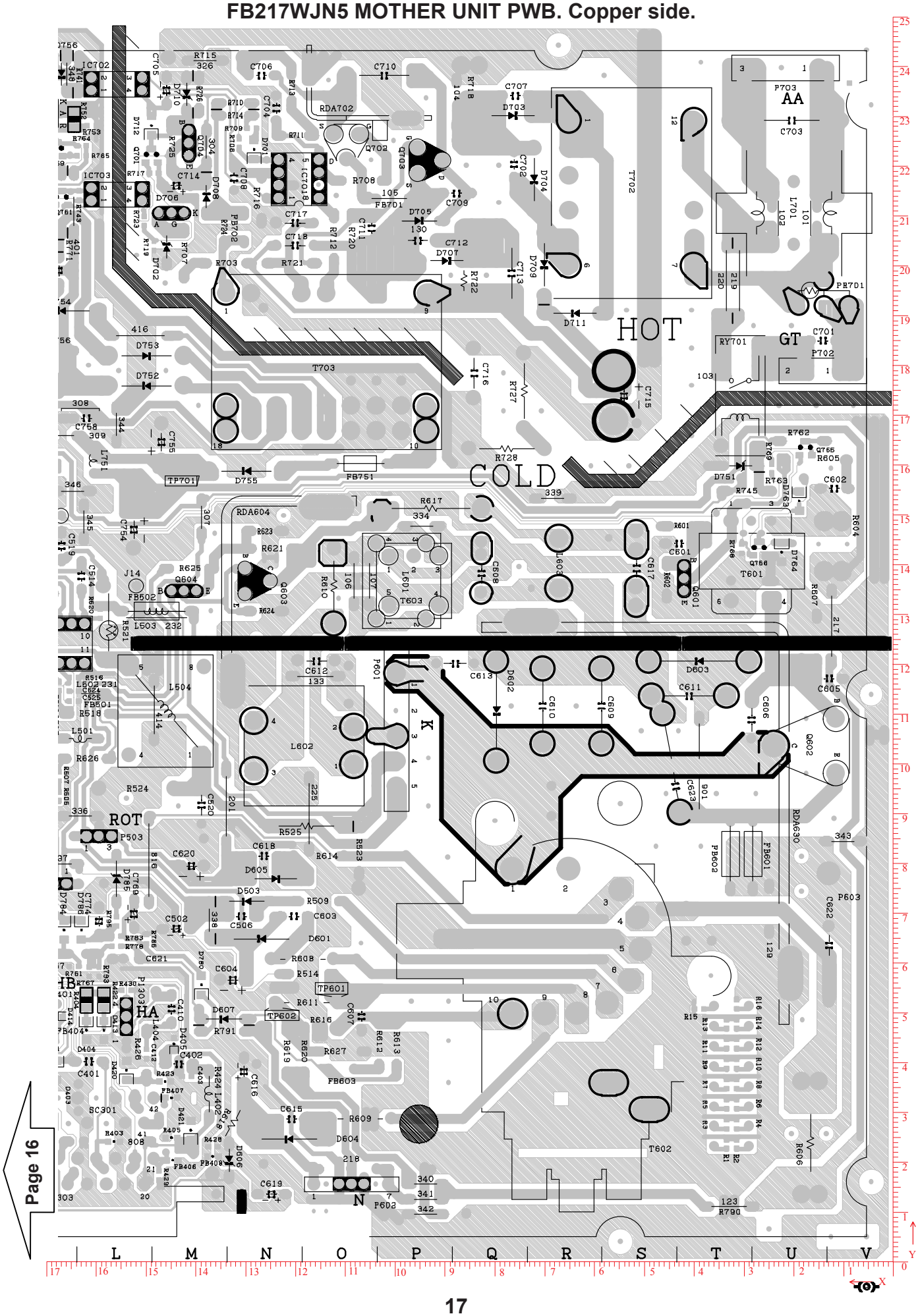
## FB217WJN5 MOTHER UNIT PWB. Component side.



## FB217WJN5 MOTHER UNIT PWB. Copper side.



## FB217WJN5 MOTHER UNIT PWB. Copper side.

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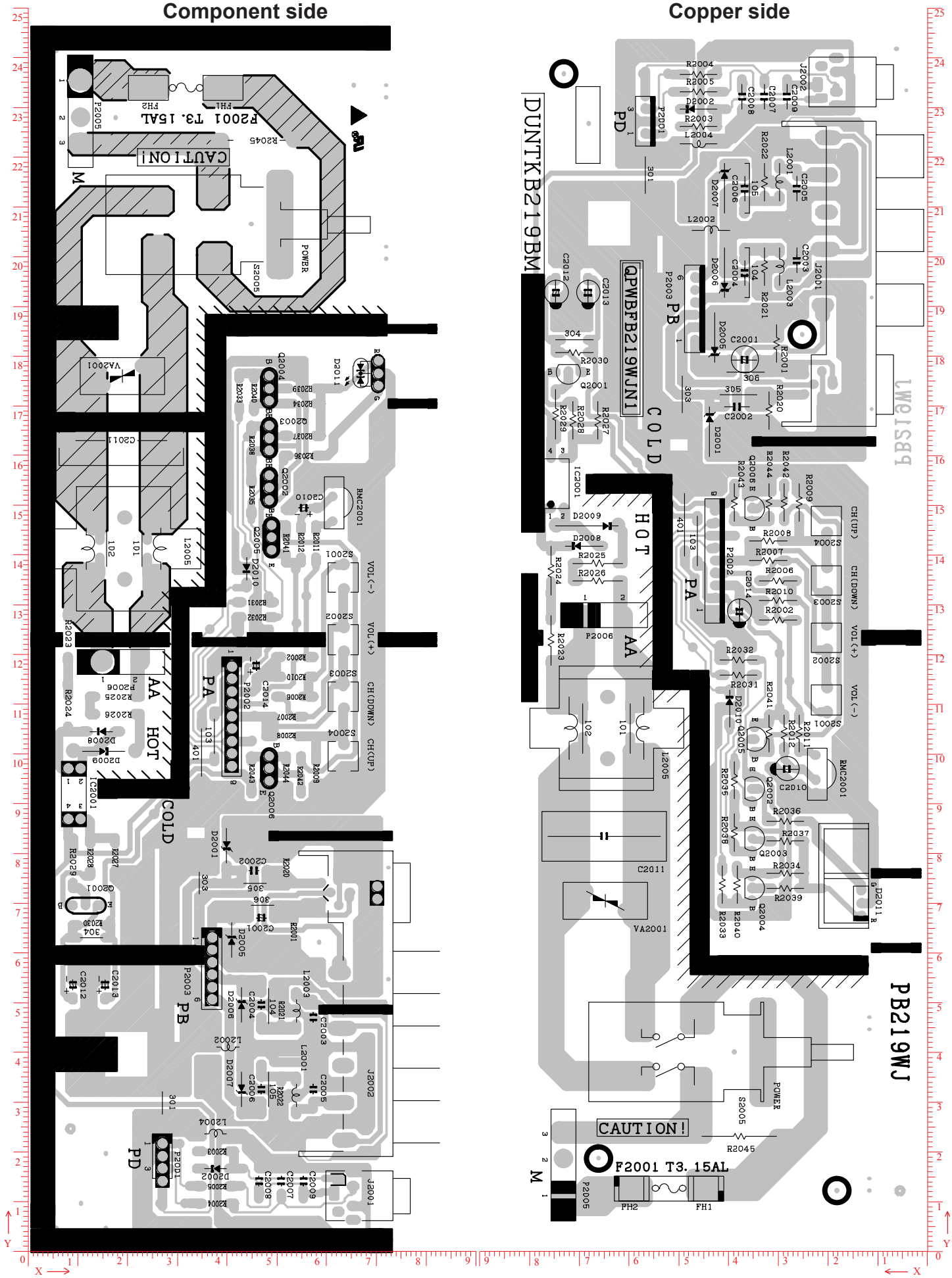
# FB219WJN1 CONTROL UNIT PWB

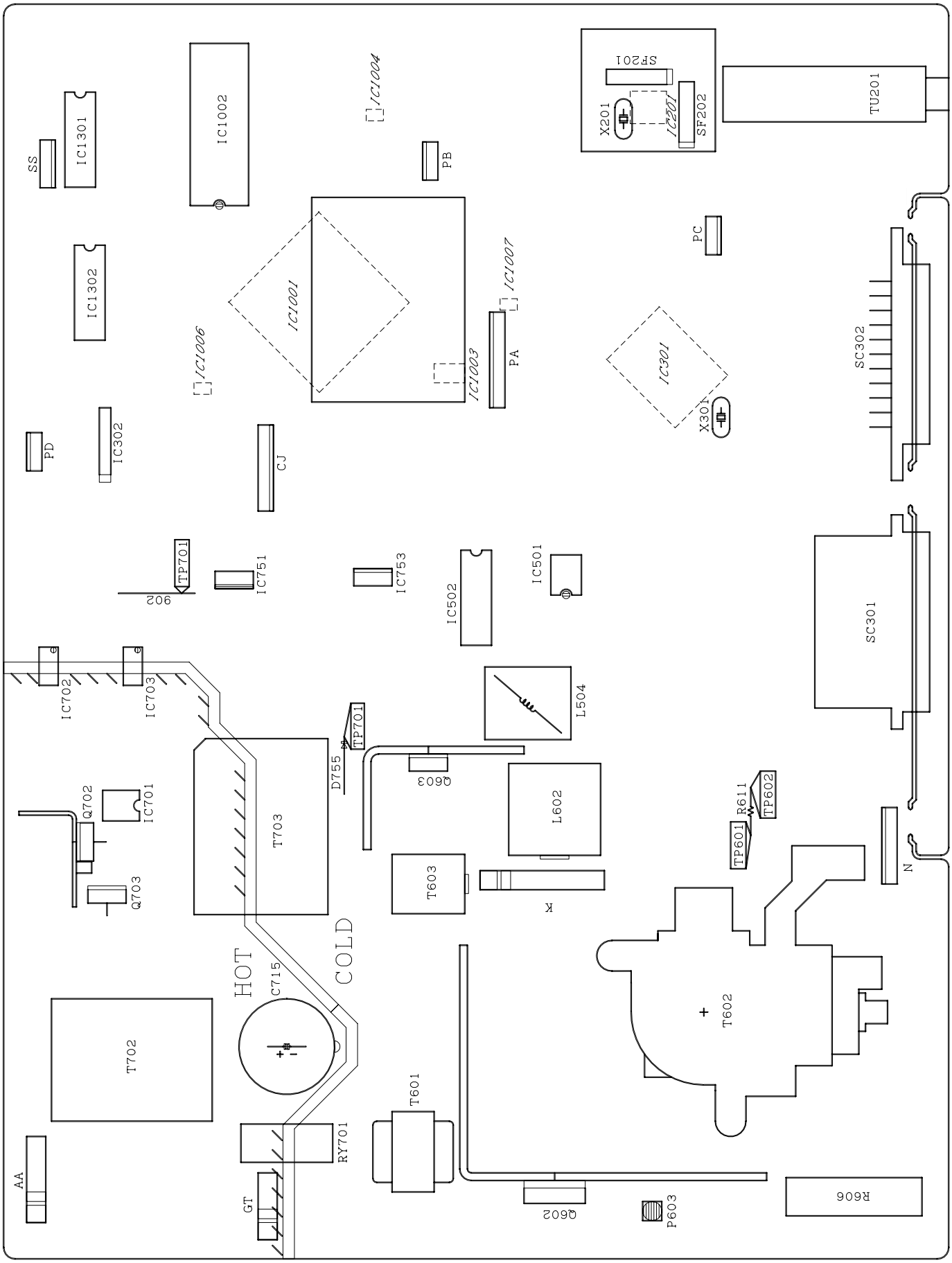
## Component side

## Copper side

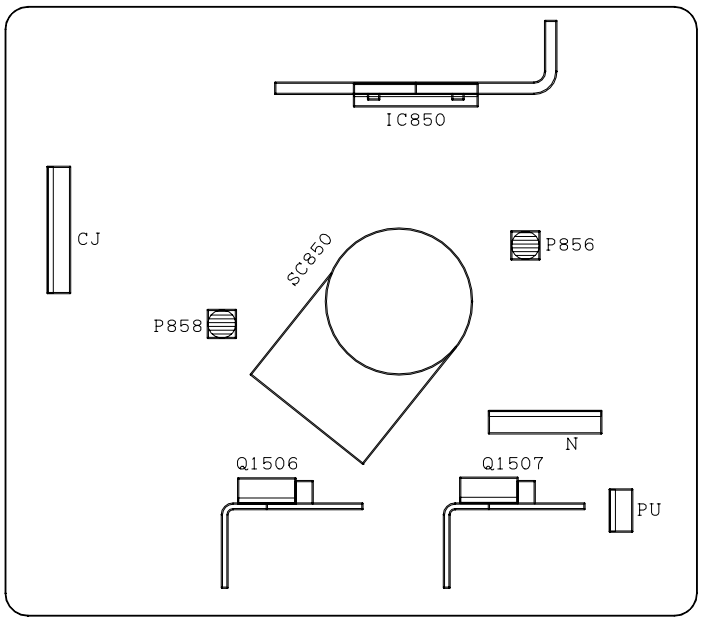


# CHASSIS LAYOUT

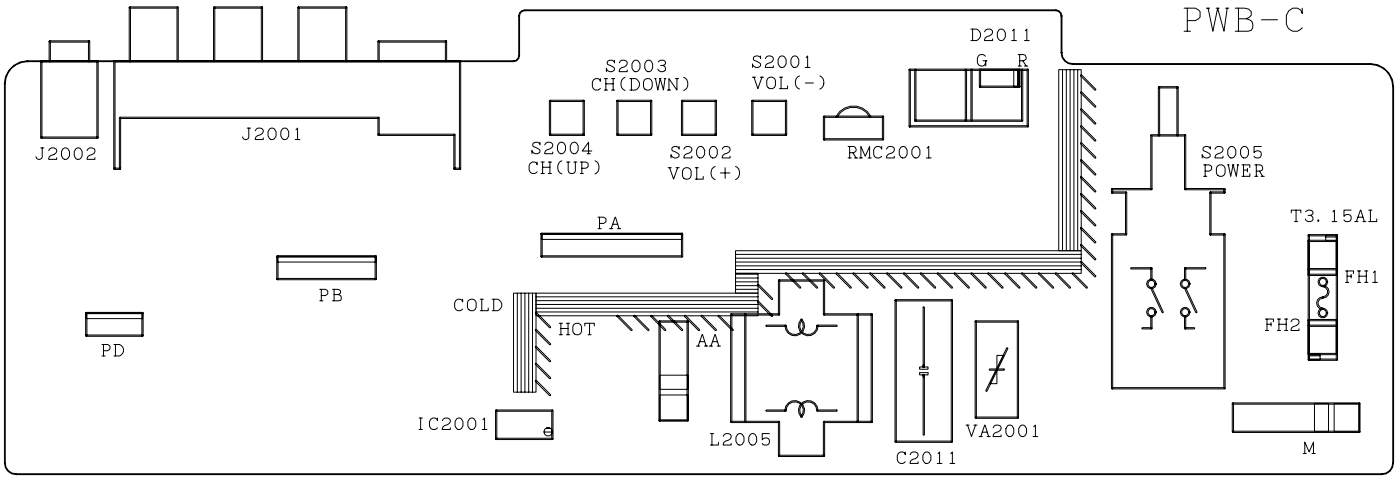
**PWB A (Mother Unit, FB217N5).**



## PWB B CHASSIS LAYOUT (CRT SOCKET UNIT, FB218N2).




## PWB C CHASSIS LAYOUT (FRONTAL POWER-CONTROL UNIT, FB219N1).



# ICs ADDITIONAL INFORMATION

## TDA9886 (IC201)

**QUICK REFERENCE DATA**

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| $V_P$ | supply voltage | notes 1 and 2 | 4.5 | 5.0 | 5.5 | V |
| $I_P$ | supply current | | 52 | 63 | 70 | mA |
| **Video part** | | | | | | |
| $V_{i(VIF)(rms)}$ | VIF input voltage sensitivity (RMS value) | –1 dB video at output | – | 60 | 100 | µV |
| $G_{VIF(cr)}$ | VIF gain control range | see Fig.7 | 60 | 66 | – | dB |
| $f_{VIF}$ | vision carrier operating frequencies | see Table 14 | – | 33.4 | – | MHz |
| | | | – | 33.9 | – | MHz |
| | | | – | 38.0 | – | MHz |
| | | | – | 38.9 | – | MHz |
| | | | – | 45.75 | – | MHz |
| | | | – | 58.75 | – | MHz |
| $\Delta f_{VIF}$ | VIF frequency window of digital acquisition help | related to $f_{VIF}$; see Fig.10 | – | ±2.3 | – | MHz |
| $V_{o(video)(p-p)}$ | video signal output voltage (peak-to-peak value) | see Fig.5 | | | | |
| | | normal mode | 1.7 | 2.0 | 2.3 | V |
| | | trap bypass mode | 0.95 | 1.10 | 1.25 | V |
| $G_{dif}$ | differential gain | *"CCIR 330"*; note 3 | | | | |
| | | B/G standard | – | – | 5 | % |
| | | L standard | – | – | 7 | % |
| $\varphi_{dif}$ | differential phase | *"CCIR 330"* | – | 2 | 4 | deg |
| $B_{video(-1dB)}$ | –1 dB video bandwidth | trap bypass mode; AC load; $C_L$ < 20 pF; $R_L$ > 1 kΩ | 5 | 6 | – | MHz |
| $B_{video(-3dB)(trap)}$ | –3 dB video bandwidth including sound carrier trap | note 4 | | | | |
| | | $f_{trap}$ = 4.5 MHz | 3.95 | 4.05 | – | MHz |
| | | $f_{trap}$ = 5.5 MHz | 4.90 | 5.00 | – | MHz |
| | | $f_{trap}$ = 6.0 MHz | 5.40 | 5.50 | – | MHz |
| | | $f_{trap}$ = 6.5 MHz | 5.50 | 5.95 | – | MHz |
| $\alpha_{SC1}$ | trap attenuation at first sound carrier | M/N standard | 30 | 36 | – | dB |
| | | B/G standard | 30 | 36 | – | dB |
| $S/N_{W(video)}$ | weighted signal-to-noise ratio of video signal | see Fig.11; note 5 | 56 | 59 | – | dB |
| $PSRR_{CVBS}$ | power supply ripple rejection at pin CVBS | $f_{ripple}$ = 70 Hz; see Fig.6; note 6 | 20 | 25 | – | dB |
| $AFC_{stps}$ | AFC control steepness | definition: $\Delta I_{AFC}/\Delta f_{VIF}$ | 0.85 | 1.05 | 1.25 | µA/kHz |
| **Audio part** | | | | | | |
| $V_{o(AF)(rms)}$ | AF output voltage (RMS value) | 27 kHz FM deviation; 50 µs de-emphasis | 430 | 540 | 650 | mV |
| THD | total harmonic distortion of audio signal | FM: 27 kHz FM deviation; 50 µs de-emphasis | – | 0.15 | 0.50 | % |
| | | AM: m = 54% | – | 0.5 | 1.0 | % |

## TDA9886 (IC201)

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| $B_{AF(-3dB)}$ | −3 dB AF bandwidth | without de-emphasis; dependent on FM-PLL filter | 80 | 100 | – | kHz |
| $S/N_{W(AF)}$ | weighted signal-to-noise ratio of audio signal | FM: 27 kHz FM deviation; 50 µs de-emphasis; vision carrier unmodulated | 52 | 56 | – | dB |
| | | AM: m = 54% | 45 | 50 | – | dB |
| $\alpha_{AM(sup)}$ | AM suppression of FM demodulator | 50 µs de-emphasis; AM: f = 1 kHz and m = 54%; referenced to 27 kHz FM deviation | 40 | 46 | – | dB |
| $PSRR_{AUD}$ | power supply ripple rejection on pin AUD | $f_{ripple}$ = 70 Hz; see Fig.6 | | | | |
| | | for AM | 20 | 26 | – | dB |
| | | for FM | 14 | 20 | – | dB |
| $V_{o(intc)(rms)}$ | IF intercarrier output level (RMS value) | QSS mode; $SC_1$; $SC_2$ off | 90 | 140 | 180 | mV |
| | | L standard; without modulation | 90 | 140 | 180 | mV |
| | | intercarrier mode; $SC_1$; $SC_2$ off; note 7 | – | – | – | mV |
| **Reference frequency** | | | | | | |
| $f_{ref}$ | reference signal frequency | note 8 | – | 4 | – | MHz |
| $V_{ref(rms)}$ | reference signal voltage (RMS value) | operation as input terminal | 80 | – | 400 | mV |

**Notes**

1. Values of video and sound parameters can be decreased at $V_P$ = 4.5 V.
2. For applications without $I^2C$-bus, the time constant (R × C) at the supply must be >1.2 µs (e.g. 1 Ω and 2.2 µF).
3. Condition: luminance range (5 steps) from 0% to 100%.
4. AC load: $C_L$ < 20 pF and $R_L$ > 1 kΩ. The sound carrier frequencies (depending on the TV standard) are attenuated by the integrated sound carrier traps (see Figs 13 to 18; $|H(s)|$ is the absolute value of transfer function).
5. $S/N_{W(video)}$ is the ratio of the black-to-white amplitude to the black level noise voltage (RMS value measured on pin CVBS). B = 5 MHz weighted in accordance with *"CCIR 567"*.
6. Conditions: video signal, grey level, positive and negative modulation.
7. The intercarrier output signal at pin SIOMAD can be calculated by the following formula taking into account the internal video signal with 1.1 V (p-p) as a reference:

   $$V_{o(intc)} = 1.1\ V\ (p\text{-}p) \times \frac{1}{2\sqrt{2}} \times 10^{\frac{\frac{V_{i(SC)}}{V_{i(PC)}}(dB) + 6\ dB\ \pm 3\ dB}{20}}$$ (RMS), where: $\frac{1}{2\sqrt{2}}$ is the correction term for RMS value,

   $\frac{V_{i(SC)}}{V_{i(PC)}}(dB)$ is the sound-to-picture carrier ratio at pins VIF1 and VIF2 in dB, 6 dB is the correction term of internal circuitry and ±3 dB is the tolerance of video output and intercarrier output $V_{o(intc)(rms)}$.
8. Pin REF is able to operate as a 1-pin crystal oscillator input as well as an external reference signal input, e.g. from the tuning system.

## TDA9886 (IC201)

### BLOCK DIAGRAM

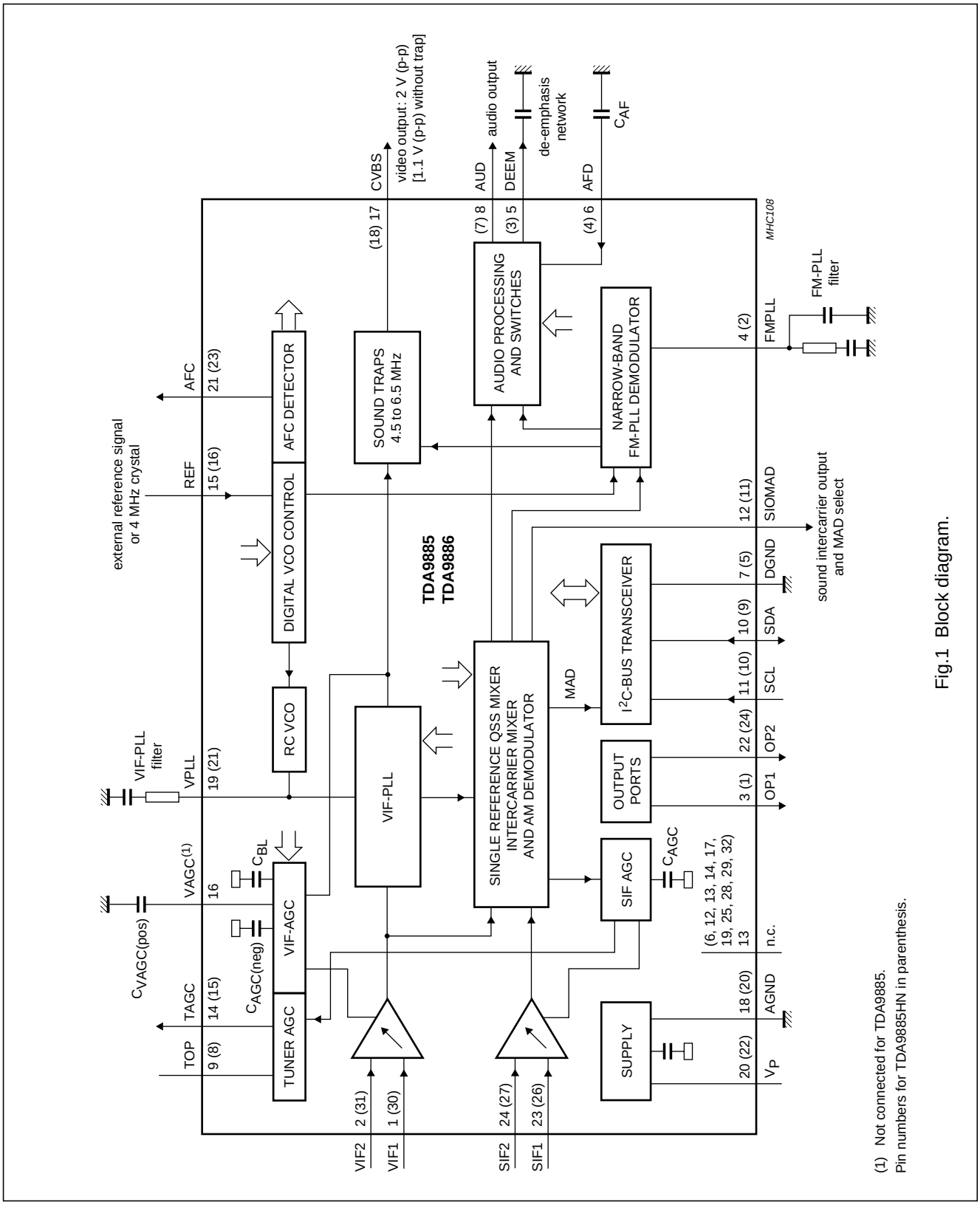


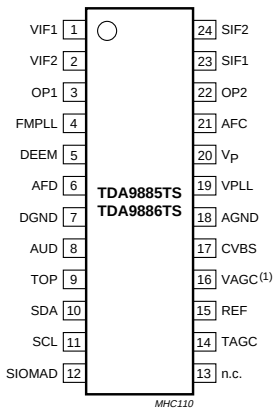

Fig.1 Block diagram.

(1) Not connected for TDA9885.
Pin numbers for TDA9885HN in parenthesis.

## TDA9886 (IC201)

**PINNING**

| SYMBOL | PIN | | | DESCRIPTION |
|---|---|---|---|---|
| | TDA9886T TDA9886TS | TDA9885T TDA9885TS | TDA9885HN | |
| VIF1 | 1 | 1 | 30 | VIF differential input 1 |
| VIF2 | 2 | 2 | 31 | VIF differential input 2 |
| n.c. | – | – | 32 | not connected |
| OP1 | 3 | 3 | 1 | output port 1; open-collector |
| FMPLL | 4 | 4 | 2 | FM-PLL for loop filter |
| DEEM | 5 | 5 | 3 | de-emphasis output for capacitor |
| AFD | 6 | 6 | 4 | AF decoupling input for capacitor |
| DGND | 7 | 7 | 5 | digital ground |
| n.c. | – | – | 6 | not connected |
| AUD | 8 | 8 | 7 | audio output |
| TOP | 9 | 9 | 8 | tuner AGC TakeOver Point (TOP) for resistor adjustment |
| SDA | 10 | 10 | 9 | $I^2C$-bus data input and output |
| SCL | 11 | 11 | 10 | $I^2C$-bus clock input |
| SIOMAD | 12 | 12 | 11 | sound intercarrier output and MAD select with resistor |
| n.c. | – | – | 12 | not connected |
| n.c. | 13 | 13 | 13 | not connected |
| n.c. | – | – | 14 | not connected |
| TAGC | 14 | 14 | 15 | tuner AGC output |
| REF | 15 | 15 | 16 | 4 MHz crystal or reference signal input |
| VAGC | 16 | – | – | VIF-AGC for capacitor |
| n.c. | – | 16 | 17 | not connected |
| CVBS | 17 | 17 | 18 | composite video output |
| n.c. | – | – | 19 | not connected |
| AGND | 18 | 18 | 20 | analog ground |
| VPLL | 19 | 19 | 21 | VIF-PLL for loop filter |
| $V_P$ | 20 | 20 | 22 | supply voltage |
| AFC | 21 | 21 | 23 | AFC output |
| OP2 | 22 | 22 | 24 | output port 2; open-collector |
| n.c. | – | – | 25 | not connected |
| SIF1 | 23 | 23 | 26 | SIF differential input 1 and MAD select with resistor |
| SIF2 | 24 | 24 | 27 | SIF differential input 2 and MAD select with resistor |
| n.c. | – | – | 28 | not connected |
| n.c. | – | – | 29 | not connected |




(1) Not connected for TDA9885TS.

Pin configuration for SSOP24.

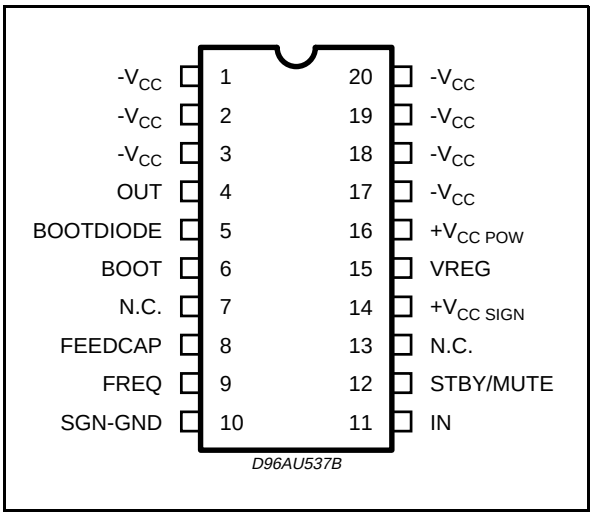
# TDA7480 (IC1301,IC1302)

## TDA7480

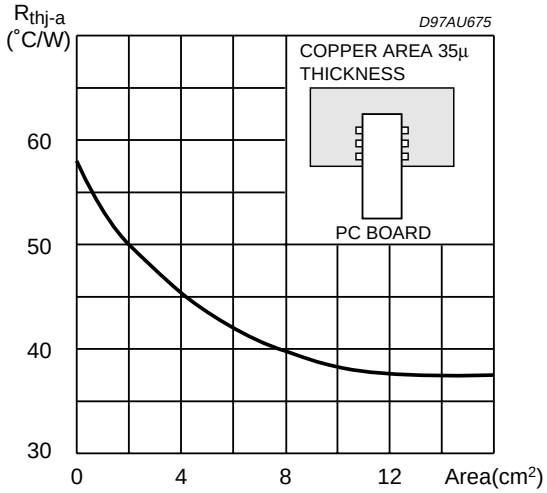
### ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CC}$ | DC Supply Voltage | ±20 | V |
| $T_{stg}$, $T_j$ | Storage and Junction Temperature | –40 to 150 | ℃ |
| $V_{FREQ}$ | Maximum Voltage Across VFREQ (Pin 9) | 8 | V |
| $T_{op}$ | Operating Temperature Range | -20 to 70 | ℃ |
| ESD | Maximum ESD on Pins | ±1.8 | kV |

**PIN CONNECTION** (Top view)




**Rth with "on board" Square Heatsink vs. copper area.**




### THERMAL DATA

| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| $R_{th\ j\text{-}amb}$ | Thermal Resistance Junction to ambient | | 80 | ℃/W |
| $R_{th\ j\text{-}pin}$ | Thermal Resistance Junction to Pin | Max. | 12 | ℃/W |

### PIN FUNCTIONS

| N. | Name | Function |
|---|---|---|
| 1 | $-V_{CC}$ | NEGATIVE SUPPLY. |
| 2 | $-V_{CC}$ | NEGATIVE SUPPLY. |
| 3 | $-V_{CC}$ | NEGATIVE SUPPLY. |
| 4 | OUT | PWM OUTPUT |
| 5 | BOOTDIODE | BOOTSTRAP DIODE ANODE |
| 6 | BOOT | BOOTSTRAP CAPACITOR |
| 7 | NC | NOT CONNECTED |
| 8 | FEEDCAP | FEEDBACK INTEGRATING CAPACITANCE |
| 9 | FREQUENCY | SETTING FREQUENCY RESISTOR |
| 10 | SGN-GND | SIGNAL GROUND |
| 11 | IN | INPUT |
| 12 | ST-BY-MUTE | ST-BY/ MUTE CONTROL PIN |
| 13 | NC | NOT CONNECTED |
| 14 | $+V_{CC}$ SIGN | POSITIVE SIGNAL SUPPLY |
| 15 | VREG | 10V INTERNAL REGULATOR |
| 16 | $+V_{CC}$ POW | POSITIVE POWER SUPPLY |
| 17 | $-V_{CC}$ | NEGATIVE SUPPLY (TO BE CONNECTED TO PIN 16 VIA C5) |
| 18 | $-V_{CC}$ | NEGATIVE SUPPLY |
| 19 | $-V_{CC}$ | NEGATIVE SUPPLY |
| 20 | $-V_{CC}$ | NEGATIVE SUPPLY |

## TDA7480 (IC1301,IC1302)

**ELECTRICAL CHARACTERISTICS** (Refer to the test circuit, $V_{CC}$ = ±14V; $R_L$ = 8Ω; $R_S$ = 50Ω; $R_f$ = 12KΩ; Demod.. filter L = 60µH, C = 470nF; f = 1KHz; $T_{amb}$ = 25°C unless otherwise specified.)

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $V_S$ | Supply Range | | ±10 | | ±16 | V |
| $I_q$ | Total Quiescent Current | $R_L$ = ∞; NO LC Filter | | 25 | 40 | mA |
| $V_{OS}$ | Output Offset Voltage | Play Condition | –50 | | +50 | mV |
| $P_O$ | Output Power | THD = 10%<br>THD = 1% | 8.5<br>6 | 10<br>7 | | W<br>W |
| | | $R_L$ = 4Ω $V_{CC}$ = ±10.5V<br>THD = 10%<br>THD = 1% | | <br>10<br>7 | | <br>W<br>W |
| $P_d$ (*) | Dissipated Power at 1W Output Power | $R_f$ = 12KΩ $P_O$ = 1W | | 1 | | W |
| $P_{DMAX}$ | Maximum Dissipated Power | $P_O$ = 10W THD 10%<br>$R_{th\text{-}j\text{-}amb}$ = 38°C/W (Area 12cm$^2$) | | 1.8 | | W |
| η | Efficiency ≡ $\frac{P_O}{P_O + P_D} \equiv \frac{P_O}{P_I}$ (**) | THD 10%<br>$R_{th\text{-}j\text{-}amb}$ = 38°C/W (Area 12cm$^2$) | 80 | 85 | | % |
| THD | Total Harmonic Distortion | $R_L$ = 8Ω; $P_O$ = 0.5W | | 0.1 | | % |
| $I_{max}$ | Overcurrent Protection Threshold | $R_L$ = 0 | 3.5 | 5 | | A |
| $T_j$ | Thermal Shut-down Junction Temperature | | | 150 | | °C |
| $G_V$ | Closed Loop Gain | | 29 | 30 | 31 | dB |
| $e_N$ | Total Input Noise | A Curve<br>f = 20Hz to 22KHz | | 7<br>12 | | µV<br>µV |
| $R_i$ | Input Resistance | | 20 | 30 | | KΩ |
| SVR | Supply Voltage Rejection | f = 100Hz; $V_r$ = 0.5 | 46 | 60 | | dB |
| $T_r$, $T_f$ | Rising and Falling Time | | | 50 | | ns |
| $R_{DSON}$ | Power Transistor on Resistance | | | 0.4 | | Ω |
| $F_{SW}$ | Switching Frequency | | 100 | 120 | 140 | KHz |
| $F_{SW\_OP}$ | Switching Frequency Operative Range | | 100 | | 200 | KHz |
| $B_F$ | Zero Signal Frequency Constant (***) | | | 1.4x10$^9$ | | HzΩ |
| $R_F$ | Frequency Controller Resistor Range (****) | | 7 | 12 | 14 | KΩ |
| **MUTE & STAND-BY FUNCTIONS** | | | | | | |
| $V_{ST\text{-}BY}$ | Stand-by range | | | | 0.8 | V |
| $V_{MUTE}$ | Mute Range | | 1.8 | | 2.5 | V |
| $V_{PLAY}$ | Play Range (1) | | 4 | | | V |
| $A_{MUTE}$ | Mute Attenuation | | 60 | 80 | | dB |
| $I_{qST\text{-}BY}$ | Quiescent Current @ Stand-by | | | 3 | 5 | mA |

*: The output average power when the amplifier is playing music can be considered roughly 1/10 of the maximum output power. So it is useful to consider the dissipated power in this condition for thermal dimensioning.

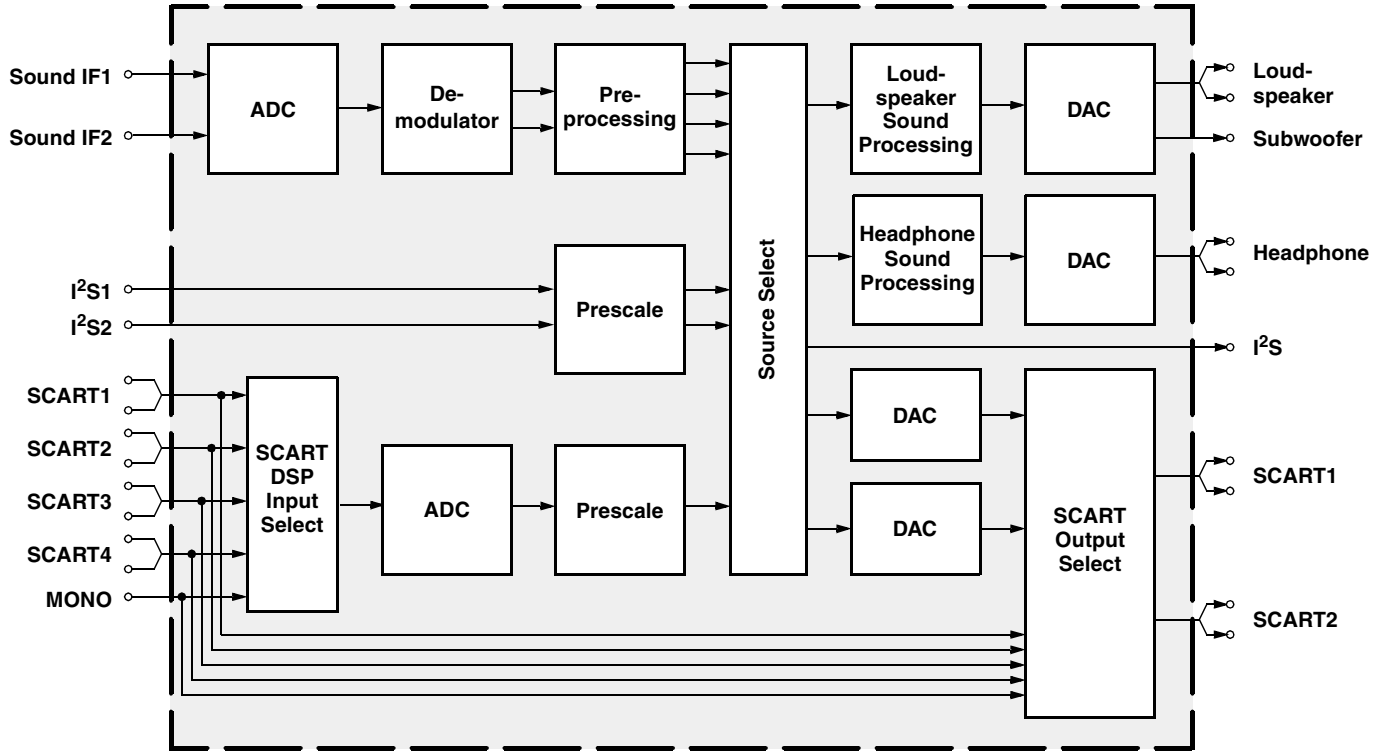
**: $P_O$ = measured across the load using the following inductor:
COIL 58120 MPPA2 (magnetics) TURNS: 28 ∅ 1mm
COIL77120 KOOL Mµ (magnetics) TURNS: 28 ∅ 1mm

***: The zero-signal switching frequency can be obtained using the following expression: $F_{SW} = B_F/R_F$

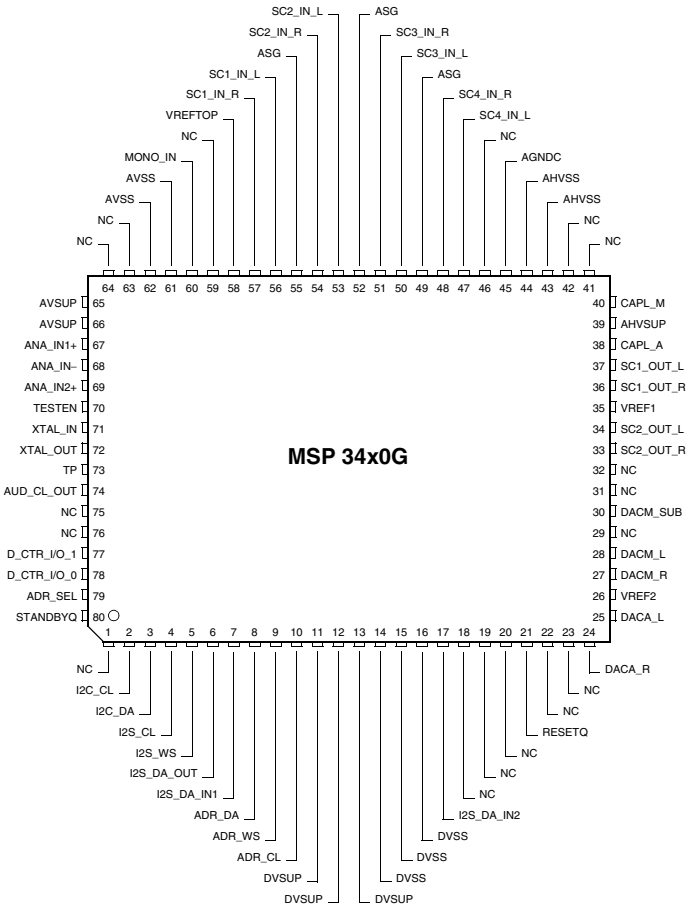
****: The maximum value of $R_F$ is related to the maximum possible value for the voltage drop on $R_F$ itself.

(1): For $V_{12}$ >5.2V, an input impedance of 10KΩ is to be considered.

## MSP3410G (IC301)




Simplified functional block diagram of the MSP 34x0G




PQFP80 package

## MSP3410G (IC301)

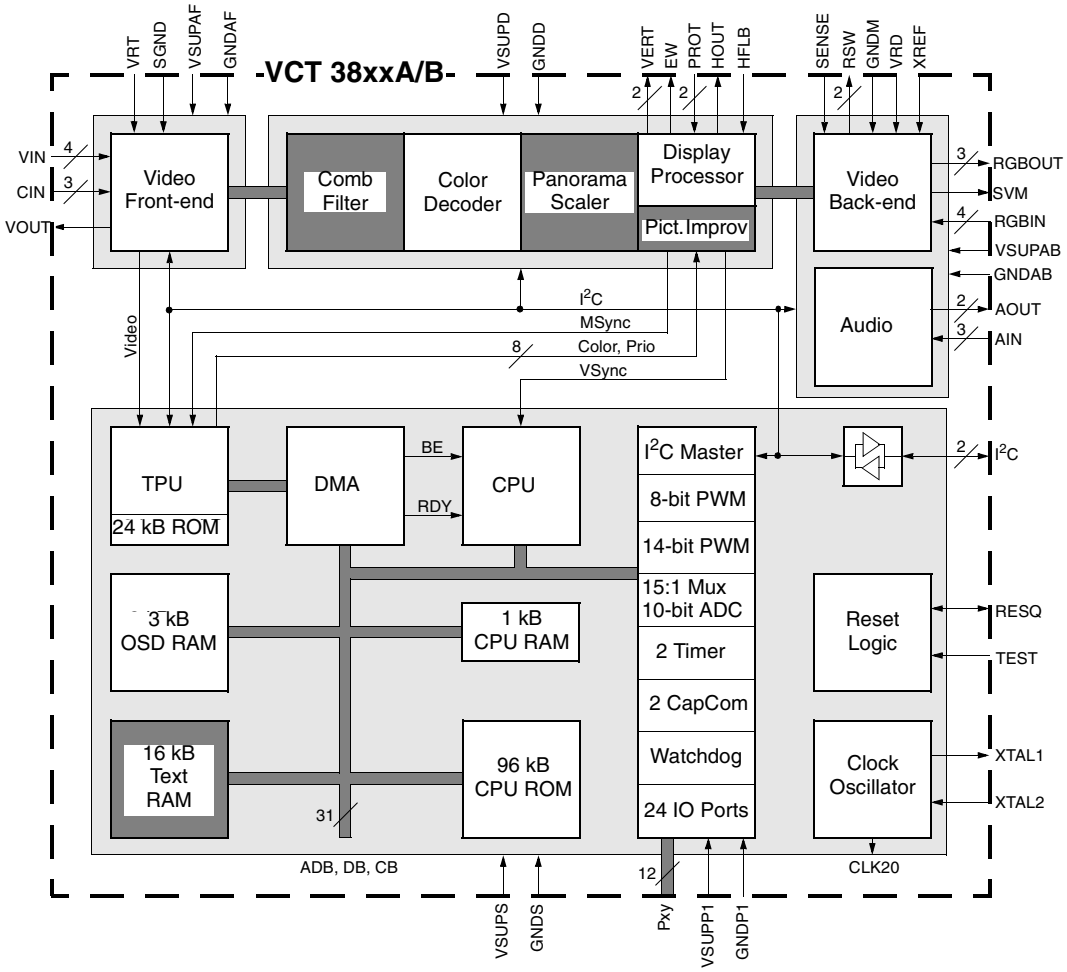
### Absolute Maximum Ratings

| Symbol | Parameter | Pin Name | Min. | Max. | Unit |
|---|---|---|---|---|---|
| $T_A$ | Ambient Operating Temperature | – | 0 | 70 | °C |
| $T_S$ | Storage Temperature | – | –40 | 125 | °C |
| $V_{SUP1}$ | First Supply Voltage | AHVSUP | –0.3 | 9.0 | V |
| $V_{SUP2}$ | Second Supply Voltage | DVSUP | –0.3 | 6.0 | V |
| $V_{SUP3}$ | Third Supply Voltage | AVSUP | –0.3 | 6.0 | V |
| $dV_{SUP23}$ | Voltage between AVSUP and DVSUP | AVSUP, DVSUP | –0.5 | 0.5 | V |
| $P_{TOT}$ | Power Dissipation<br>PLCC68<br>PSDIP64<br>PSDIP52<br>PQFP80<br>PLQFP64 | AHVSUP, DVSUP, AVSUP | | <br>1200<br>1300<br>1200<br>1000<br>960 | <br>mW<br>mW<br>mW<br>mW<br>mW |
| $V_{Idig}$ | Input Voltage, all Digital Inputs | | –0.3 | $V_{SUP2}$+0.3 | V |
| $I_{Idig}$ | Input Current, all Digital Pins | – | –20 | +20 | mA[1] |
| $V_{Iana}$ | Input Voltage, all Analog Inputs | SCn_IN_s,[2] MONO_IN | –0.3 | $V_{SUP1}$+0.3 | V |
| $I_{Iana}$ | Input Current, all Analog Inputs | SCn_IN_s,[2] MONO_IN | –5 | +5 | mA[1] |
| $I_{Oana}$ | Output Current, all SCART Outputs | SCn_OUT_s[2] | [3], [4] | [3], [4] | |
| $I_{Oana}$ | Output Current, all Analog Outputs except SCART Outputs | DACp_s[2] | [3] | [3] | |
| $I_{Cana}$ | Output Current, other pins connected to capacitors | CAPL_p,[2] AGNDC | [3] | [3] | |

[1] positive value means current flowing into the circuit
[2] “n” means “1”, “2”, “3”, or “4”, “s” means “L” or “R”, “p” means “M” or “A”
[3] The analog outputs are short-circuit proof with respect to First Supply Voltage and ground.
[4] Total chip power dissipation must not exceed absolute maximum rating.

Stresses beyond those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only. Functional operation of the device at these or any other conditions beyond those indicated in the “Recommended Operating Conditions/Characteristics” of this specification is not implied. Exposure to absolute maximum ratings conditions for extended periods may affect device reliability.

## VCT3834 (IC1001)




Block diagram of the VCT 38xxA/B (shaded blocks are optional)

The block diagram does not show the additional features of VCT 38xxB.

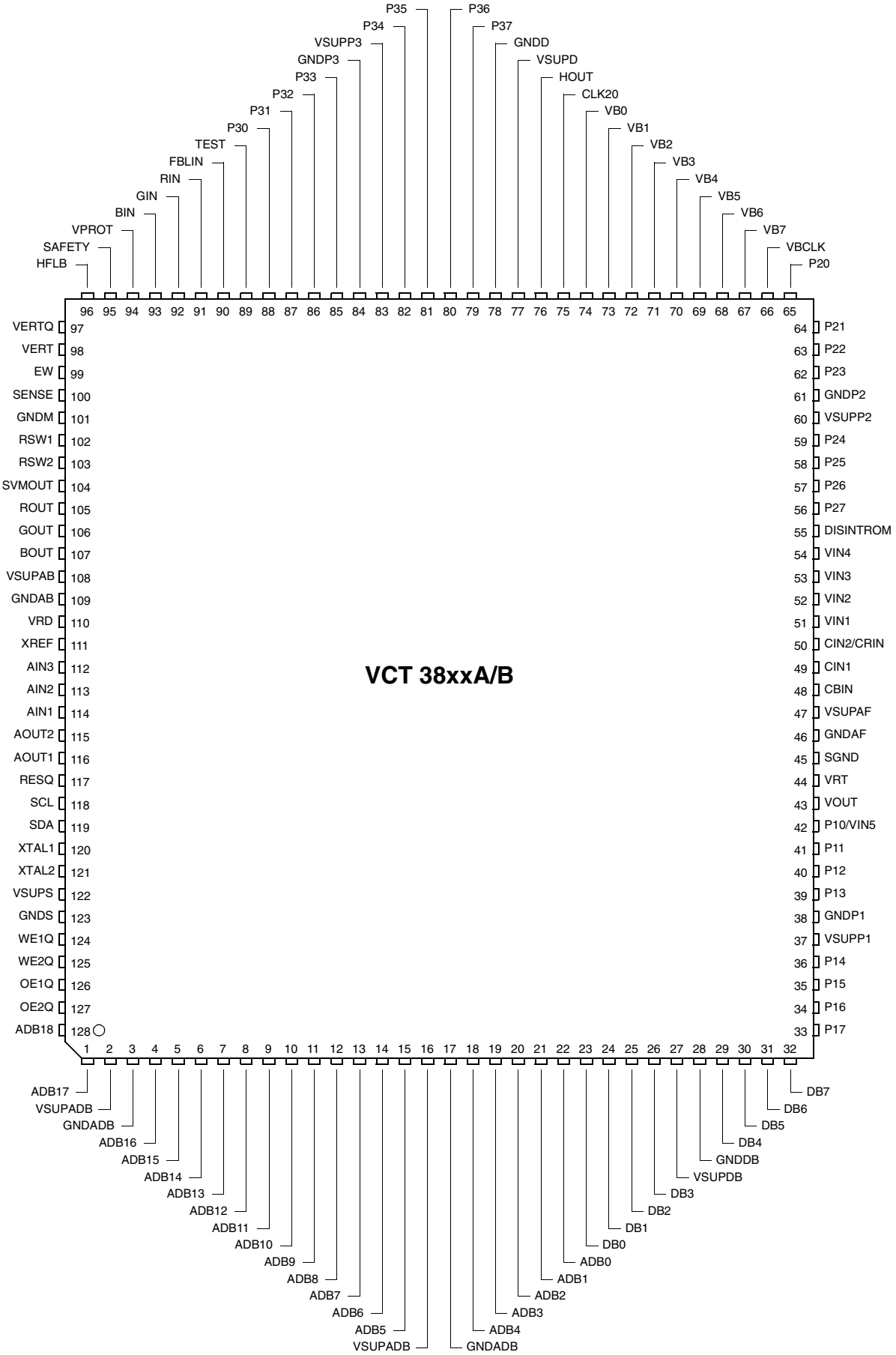
### Absolute Maximum Ratings

| Symbol | Parameter | Pin Name | Min. | Max. | Unit |
|---|---|---|---|---|---|
| $T_A$ | Ambient Operating Temperature | | – | 65 | °C |
| $T_S$ | Storage Temperature | | –40 | 125 | °C |
| $P_{TOT}$ | Total Power Dissipation | | – | 1400 | mW |
| $VSUP_x$ | Supply Voltage | $VSUP_x$ | –0.3 | 6 | V |
| $V_I$ | Input Voltage, all Inputs | | –0.3 | $VSUP_x$+0.3 [1)] | V |
| $V_O$ | Output Voltage, all Outputs | | –0.3 | $VSUP_x$+0.3 [1)] | V |
| $V_{IO}$ | Input/Output Voltage, all Open Drain Outputs | | –0.3 | 6 | V |

[1)] Refer to Pin Circuits (chapter 6.6. on page 157)

Stresses beyond those listed in the “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only. Functional operation of the device at these or any other conditions beyond those indicated in the “Recommended Operating Conditions/Characteristics” of this specification is not implied. Exposure to absolute maximum ratings conditions for extended periods may affect device reliability.

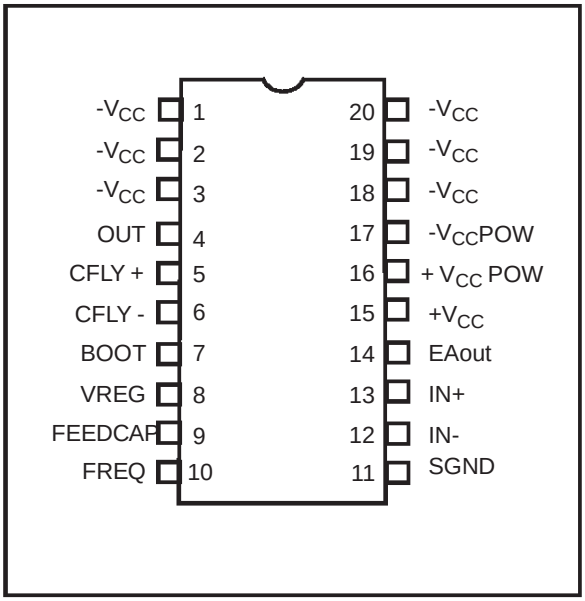
## VCT3834 (IC1001)




PMQFP128 package

## STV9380 (IC502)

### PIN CONNECTION




### PIN FUNCTIONS

| Pin Number | Name | Function |
|---|---|---|
| 1 | $-V_{CC}$ | Negative supply |
| 2 | $-V_{CC}$ | Negative supply |
| 3 | $-V_{CC}$ | Negative supply |
| 4 | OUT | PWM Output |
| 5 | CFLY+ | Flyback capacitor |
| 6 | CFLY- | Flyback capacitor |
| 7 | BOOT | Bootstrap capacitor |
| 8 | VREG | Internal voltage regulator |
| 9 | FEEDCAP | Feed-back integrating capacitor |
| 10 | FREQ | Frequency setting resistor |
| 11 | SGND | Signal Ground |
| 12 | IN- | Error amplifier inverting input |
| 13 | IN+ | Error amplifier non-inverting input |
| 14 | EA out | Error amplifier output |
| 15 | $+V_{CC}$ | Positive supply |
| 16 | $+V_{CC}$POW | Positive Power supply |
| 17 | -VccPOW | Negative Power supply |
| 18 | $-V_{CC}$ | Negative supply |
| 19 | $-V_{CC}$ | Negative supply |
| 20 | $-V_{CC}$ | Negative supply |

## STV9380 (IC502)

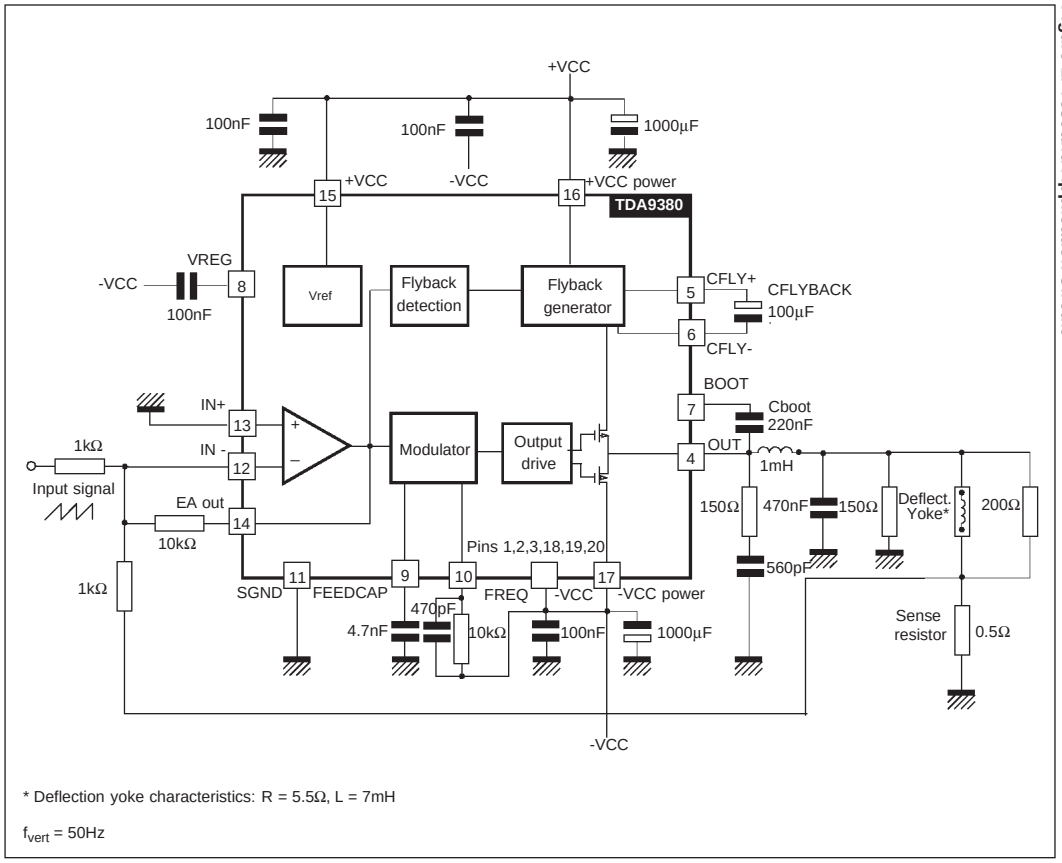



Figure 1. Test and Application Circuit

* Deflection yoke characteristics: R = 5.5Ω, L = 7mH

$f_{vert}$ = 50Hz

### ELECTRICAL CHARACTERISTICS (refer to Figure 1 on page 3)

Tamb = 25°C unless otherwise specified, Vcc = ±12V, $f_{vert}$=50Hz

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| +Vcc | Positive supply range | | +10 | | +18 | V |
| -Vcc | Negative supply range | | -18 | | -10 | V |
| ΔVcc | Maximum recommended difference between +Vcc and \|–Vcc\| | | | | ±4 | V |
| $Vcc_{start}$ | Low Vcc detection | | | ±6.5 | | V |
| Iq | Quiescent supply current | Input voltage = 0 | | 14 | | mA |
| Iy | Maximum recommended vertical yoke current | | | | ±1.25 | A |
| $I_{13}$, $I_{12}$ | Amplifier Input bias current | | | -0.1 | | µA |
| $V_{OS}$ | Output Offset voltage | Note 1 | -50 | | +50 | mV |
| SVR | Supply voltage rejection | Note 2 | | 82 | | dB |
| $Fly_{thr}$ | Flyback detection threshold (positive slope) | V(14) | | 1.5 | | V |
| $Fly_{thf}$ | Flyback detection threshold (negative slope) | V(14) | | 0.5 | | V |
| Pd | Integrated circuit Dissipated power | Note 3 | | 1.1 | | W |
| Fsw | Switching frequency | $R_{freq}$ = 10kΩ | 120 | 140 | 160 | kHz |
| Fsw - op | Switching frequency operative range | | 100 | | 200 | kHz |
| $R_{freq}$ | Frequency controller resistor range | Pin 10 | 7 | 10 | 14 | kΩ |

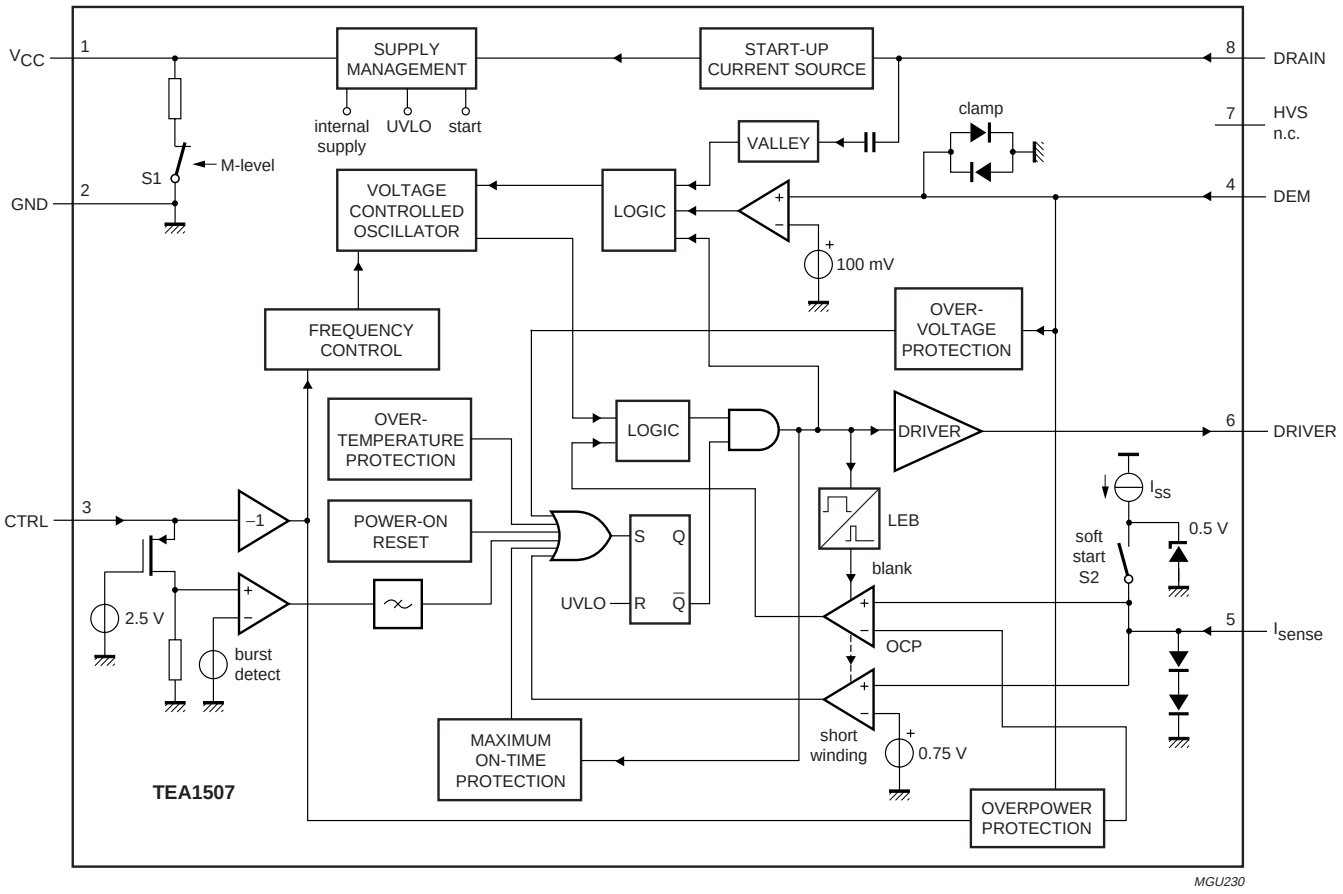
*Note: 1* Input voltage = 0, measured after the filter (e.g. accross the 470 nF filter capacitor)

*Note: 2* Supply rejection of the positive or negative power supply. Vcc ripple =1Vpp, f=100Hz, measured on the sense resistor.

*Note: 3* Power dissipated in the circuit in the case of the application from Figure 1 and the current in the deflection yoke adjusted to 2.5App. The corresponding power dissipated in the vertical deflection yoke is 2.8W.

## TEA1507 (IC701)

### Block Diagram




### PINNING

| SYMBOL | PIN | DESCRIPTION |
|---|---|---|
| $V_{CC}$ | 1 | supply voltage |
| GND | 2 | ground |
| CTRL | 3 | control input |
| DEM | 4 | input from auxiliary winding for demagnetization timing, OVP and OPP |
| $I_{sense}$ | 5 | programmable current sense input |
| DRIVER | 6 | gate driver output |
| HVS | 7 | high voltage safety spacer, not connected |
| DRAIN | 8 | drain of external MOS switch, input for start-up current and valley sensing |

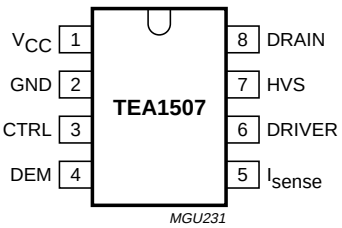



Fig.3 Pin configuration.

## TEA1507 (IC701)

**CHARACTERISTICS**

$T_{amb}$ = 25 °C; $V_{CC}$ = 15 V; all voltages are measured with respect to ground (pin 2); currents are positive when flowing into the IC; unless otherwise specified.

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| **Start-up current source (pin 8)** | | | | | | |
| $I_{i(DRAIN)}$ | supply current drawn from drain pin | $V_{CC}$ = 0 V; $V_{DRAIN}$ > 100 V | 1.0 | 1.2 | 1.4 | mA |
| | | with auxiliary supply; $V_{DRAIN}$ > 100 V | – | 100 | 300 | µA |
| $BV_{DSS}$ | breakdown voltage | | 650 | – | – | V |
| M-level | mains-dependent operation-enabling level | | 60 | – | 100 | V |
| **$V_{CC}$ management (pin 1)** | | | | | | |
| $V_{CC(start)}$ | start-up voltage on $V_{CC}$ | | 10.3 | 11 | 11.7 | V |
| $V_{CC(UVLO)}$ | under voltage lock-out on $V_{CC}$ | | 8.1 | 8.7 | 9.3 | V |
| $V_{CC(hys)}$ | hysteresis voltage on $V_{CC}$ | $V_{CC(start)} - V_{CC(UVLO)}$ | 2.0 | 2.3 | 2.6 | V |
| $I_{i(VCC)H}$ | pin $V_{CC}$ charging current | $V_{DRAIN}$ > 100 V; $V_{CC}$ < 3V | –1.2 | –1 | –0.8 | mA |
| $I_{i(VCC)L}$ | pin $V_{CC}$ charging current | $V_{DRAIN}$ > 100 V; 3 V < $V_{CC}$ < $V_{CC(UVLO)}$ | –1.2 | –0.75 | –0.45 | mA |
| $I_{VCC(restart)}$ | pin $V_{CC}$ restart current | $V_{DRAIN}$ > 100 V; $V_{CC(UVLO)}$ < $V_{CC}$ < $V_{CC(start)}$ | –650 | –550 | –450 | µA |
| $I_{CC(operate)}$ | supply current under normal operation | no load on pin DRIVER | 1.1 | 1.3 | 1.5 | mA |
| **Demagnetization management (pin 4)** | | | | | | |
| $V_{DEM}$ | demagnetization comparator threshold voltage on pin DEM | | 50 | 100 | 150 | mV |
| $I_{DEM}$ | pin DEM current | $V_{DEM}$ = 50 mV | –50[1] | – | 0 | nA |
| $V_{clamp(DEM)(neg)}$ | negative clamp voltage on pin DEM | at $I_{DEM}$ = –150 µA | –0.5 | –0.25 | –0.05 | V |
| $V_{clamp(DEM)(pos)}$ | positive clamp voltage on pin DEM | at $I_{DEM}$ = 250 µA | 0.5 | 0.7 | 0.9 | V |
| $t_{suppr}$ | suppression of transformer ringing at start of secondary stroke | | 1.1 | 1.5 | 1.9 | µs |
| **Pulse width modulator** | | | | | | |
| $t_{on(min)}$ | minimum on-time | | – | $t_{leb}$ | – | ns |
| $t_{on(max)}$ | maximum on-time | latched | 40 | 50 | 60 | µs |
| **Oscillator** | | | | | | |
| $f_{oscL}$ | oscillator low frequency (fixed frequency) | $V_{CTRL}$ > 1.5 V | 5 | 6.5 | 8 | kHz |
| $f_{oscH}$ | oscillator high frequency (fixed frequency) | $V_{CTRL}$ < 1 V | 145 | 175 | 205 | kHz |
| $V_{vco(start)}$ | peak voltage at pin $I_{sense}$, where frequency reduction starts | see Fig.6 | – | 75 | – | mV |
| $V_{vco(max)}$ | peak voltage at pin $I_{sense}$, where the frequency is equal to $f_{oscL}$ | | – | 50 | – | mV |
| **Duty cycle control (pin 3)** | | | | | | |
| $V_{CTRL(min)}$ | min. voltage on CTRL (max. duty cycle) | | – | 1.0 | – | V |
| $V_{CTRL(max)}$ | max. voltage on CTRL (min. duty cycle) | | – | 1.5 | – | V |

## TEA1507 (IC701)

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| **Burst mode standby (pin 3)** | | | | | | |
| $V_{th(burst)(on)}$ | burst mode standby active threshold voltage | at $I_{burst}$ = 6 mA | 3.3 | 3.8 | 4.3 | V |
| $I_{th(burst)(on)}$ | burst mode standby active current | | 16 | – | – | mA |
| $I_{th(burst)(off)}$ | burst mode standby inactive current | | – | – | 6 | mA |
| $t_{(burst-blank)}$ | burst mode standby blanking time | | 25 | 30 | 35 | µs |
| **Valley switch (pin 8)** | | | | | | |
| $\Delta V/\Delta t_{valley}$ | $\Delta V/\Delta t$ for valley recognition | | –85 | – | +85 | V/µs |
| $t_{valley-swon}$ | delay from valley recognition to switch-on | | – | 150(1) | – | ns |
| **Current and short winding protection (pin 5)** | | | | | | |
| $V_{sense(max)}$ | maximum source voltage OCP | $\Delta V/\Delta t$ = 0.1 V/µs | 0.48 | 0.52 | 0.56 | V |
| $t_{propagation}$ | delay from detecting $V_{sense(max)}$ to switch-off | $\Delta V/\Delta t$ = 0.5 V/µs | – | 140 | 185 | ns |
| $V_{swp}$ | short winding protection voltage | | 0.83 | 0.88 | 0.96 | V |
| $t_{leb}$ | blanking time for current and short winding protection | | 300 | 370 | 440 | ns |
| $I_{ss}$ | soft start current | $V_{sense}$ < 0.5 V | 45 | 60 | 75 | µA |
| **Overvoltage protection (pin 4)** | | | | | | |
| $I_{(OVP)(DEM)}$ | OVP protection level at pin 4, set by the demagnetization resistor $R_{DEM}$; see Section “OverVoltage Protection (OVP)” | | 54 | 60 | 66 | µA |
| **Overpower protection (pin 4)** | | | | | | |
| $I_{(OPP)(DEM)}$ | OPP current at pin 4, start of OPP correction. Set by the demagnetization resistor $R_{DEM}$; see Section “OverPower Protection (OPP)” | | – | –24 | – | µA |
| $I_{(OPP50\%)(DEM)}$ | OPP current at pin 4 where maximum source voltage is limited to 0.3 V | | – | –100 | – | µA |
| **Driver (pin 6)** | | | | | | |
| $I_{source}$ | source current capability of driver | $V_{CC}$ = 9.5 V; $V_{DRIVER}$ = 2 V | – | –170 | –88 | mA |
| $I_{sink}$ | sink current capability of driver | $V_{CC}$= 9.5 V; $V_{DRIVER}$ = 2 V | – | 300 | – | mA |
| | | $V_{CC}$ = 9.5 V; $V_{DRIVER}$ = 9.5 V | 400 | 700 | – | mA |
| $V_{o(driver)(max)}$ | maximum output voltage of the driver | $V_{CC}$ > 12 V | – | 11.5 | 12 | V |
| **Temperature protection** | | | | | | |
| $T_{prot(max)}$ | maximum temperature threshold | | 130 | 140 | 150 | °C |
| $T_{prot(hyst)}$ | hysteresis temperature | | – | 8(1) | – | °C |

**Note**

1. Guaranteed by design.

# DESCRIPTION OF SCHEMATIC DIAGRAMS

**SAFETY NOTE:**
1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.

2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

**NOTE:**
1. The unit of resistance « ohm »is omitted (K=1000 ohms. M= Megaohm).
2. All resistors are 1/8 watt. unless otherwise noted.
3. All capacitors are µF, unless otherwise noted (P= µµF).

**IMPORTANT SAFETY NOTE:**

PARTS MARKED WITH « ⚠ » ( ▬▬▬ ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

**SERVICE PRECAUTION:**

THE AREA ENCLOSED BY THIS LINE (–•–•– ) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

**CAUTION**
**This circuit diagram is original one, therefore there may be slight difference from yours.**

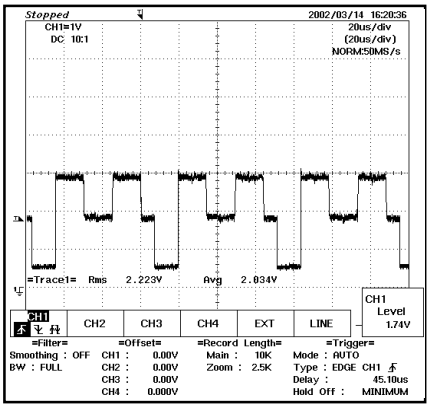
## Waveform Measurement Condition:

**1.** Test Equipment: DIGITAL SLPE LECROY.

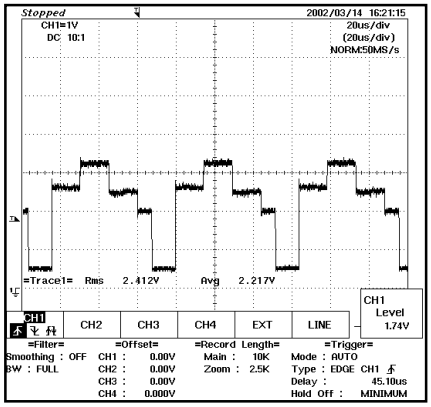
**2.** Test Conditions: CH-12; COLOUR BARS; 70dB FROM RF INPUT

**3.** TV Condition: PICTURE AND AUDIO : SETTINGS → FACTORY PRESETS

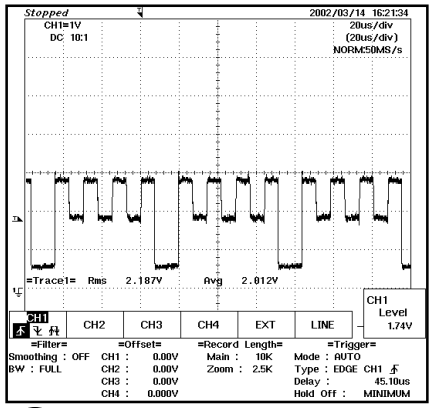
## Waveform:


Stopped
2002/03/14 16:20:36
CH1=1V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 2.223V Avg 2.034V
CH1 Level 1.74V
CH1 CH2 CH3 CH4 EXT LINE
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 45.10us
CH4 : 0.000V Hold Off : MINIMUM

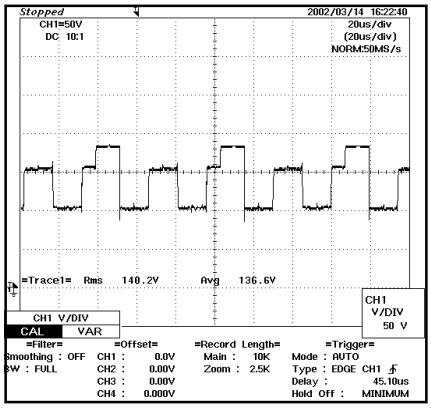
(1) Pin1 Vp-p= 2.7V


Stopped
2002/03/14 16:21:15
CH1=1V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 2.412V Avg 2.217V
CH1 Level 1.74V
CH1 CH2 CH3 CH4 EXT LINE
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 45.10us
CH4 : 0.000V Hold Off : MINIMUM

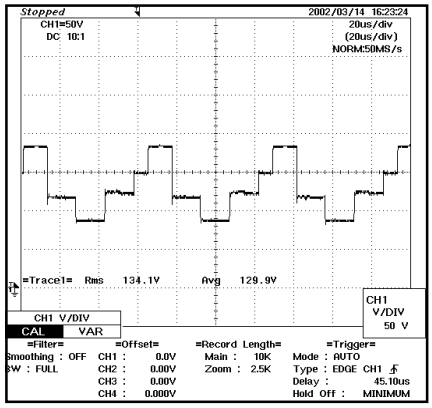
(2) Pin2 Vp-p= 2.7V


Stopped
2002/03/14 16:21:34
CH1=1V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 2.187V Avg 2.012V
CH1 Level 1.74V
CH1 CH2 CH3 CH4 EXT LINE
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 45.10us
CH4 : 0.000V Hold Off : MINIMUM

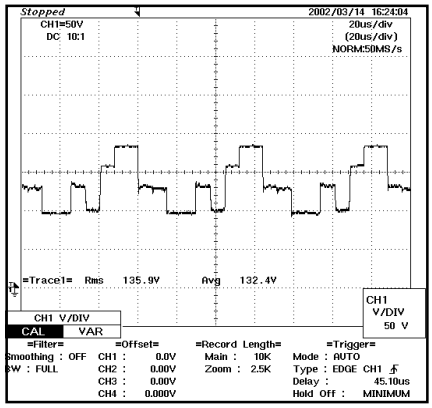
(3) Pin3 Vp-p= 2.8V


Stopped
2002/03/14 16:22:40
CH1=50V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 140.2V Avg 136.6V
CH1 V/DIV
CAL VAR
CH1 V/DIV 50 V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 45.10us
CH4 : 0.000V Hold Off : MINIMUM

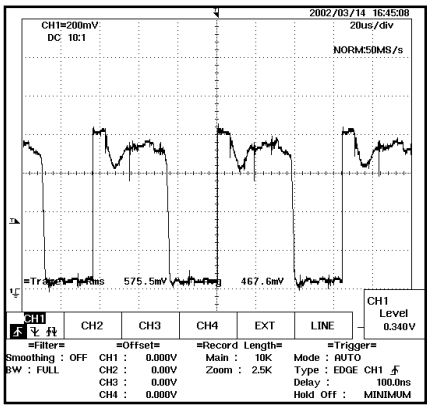
4 Pin4 Vp-p= 100V


Stopped
2002/03/14 16:23:24
CH1=50V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 134.1V Avg 129.9V
CH1 V/DIV
CAL VAR
CH1 V/DIV 50 V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 45.10us
CH4 : 0.000V Hold Off : MINIMUM

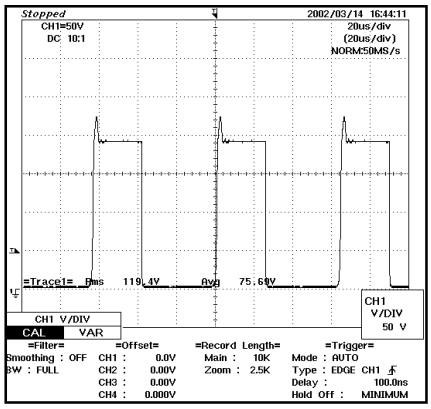
5 Pin5 Vp-p= 100V


Stopped
2002/03/14 16:24:04
CH1=50V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 135.9V Avg 132.4V
CH1 V/DIV
CAL VAR
CH1 V/DIV 50 V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 45.10us
CH4 : 0.000V Hold Off : MINIMUM

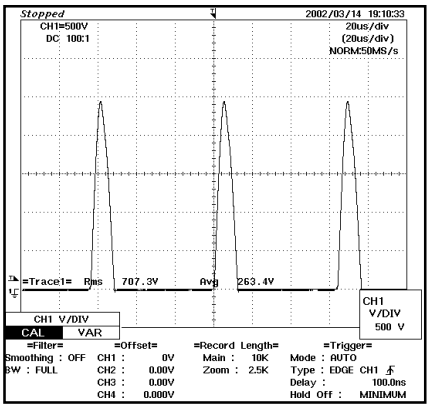
6 Pin6 Vp-p= 100V


2002/03/14 16:45:08
CH1=200mV
DC 10:1
20us/div
NORM:50MS/s
=Trace1= Rms 575.5mV Avg 467.6mV
CH1
CH2 CH3 CH4 EXT LINE
CH1 Level 0.340V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

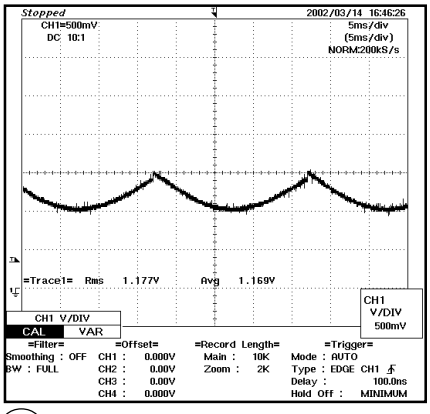
7 Pin7 Vp-p= 0.8V


Stopped
2002/03/14 16:44:11
CH1=50V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 119.4V Avg 75.68V
CH1 V/DIV
CAL VAR
CH1 V/DIV 50 V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

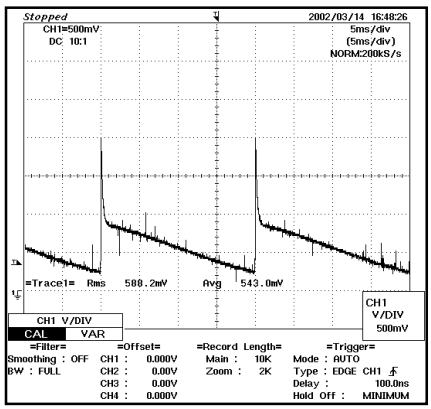
8 Pin8 Vp-p= 225V


Stopped
2002/03/14 19:10:33
CH1=500V
DC 100:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 707.3V Avg 263.4V
CH1 V/DIV
CAL VAR
CH1 V/DIV 500 V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

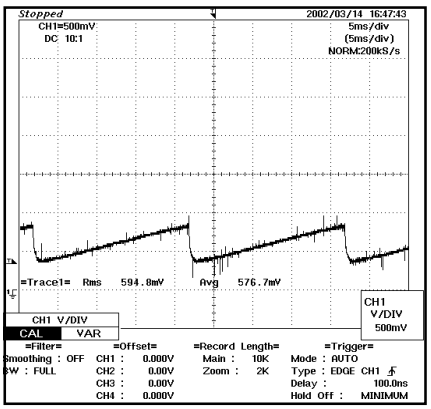
9 Pin9 Vp-p=1200V


Stopped
2002/03/14 16:46:26
CH1=500mV
DC 10:1
5ms/div
(5ms/div)
NORM:200kS/s
=Trace1= Rms 1.177V Avg 1.169V
CH1 V/DIV
CAL VAR
CH1 V/DIV 500mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

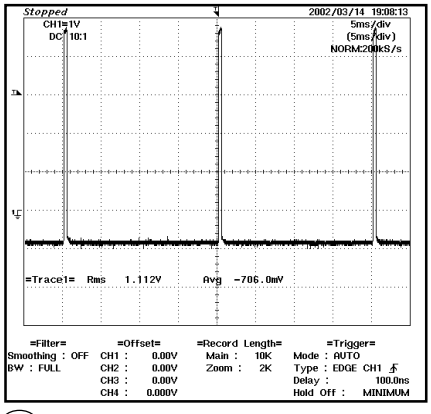
10 Pin10 Vp-p= 0.4V


Stopped
2002/03/14 16:48:26
CH1=500mV
DC 10:1
5ms/div
(5ms/div)
NORM:200kS/s
=Trace1= Rms 580.2mV Avg 543.0mV
CH1 V/DIV
CAL VAR
CH1 V/DIV 500mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

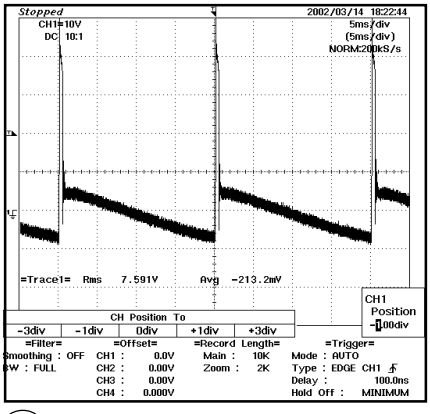
11 Pin11 Vp-p= 1.8V


Stopped
2002/03/14 16:47:43
CH1=500mV
DC 10:1
5ms/div
(5ms/div)
NORM:200kS/s
=Trace1= Rms 594.8mV Avg 576.7mV
CH1 V/DIV
CAL VAR
CH1 V/DIV 500mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

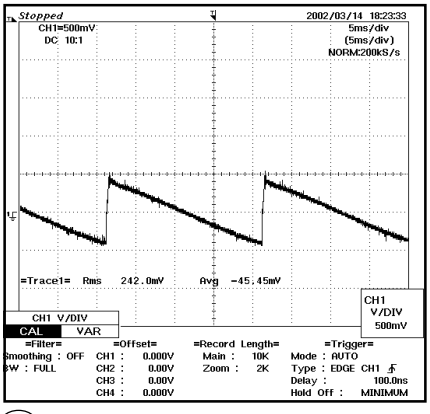
12 Pin12 Vp-p= 0.5V


Stopped
2002/03/14 19:08:13
CH1=1V
DC 10:1
5ms/div
(5ms/div)
NORM:200kS/s
=Trace1= Rms 1.112V Avg -706.0mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

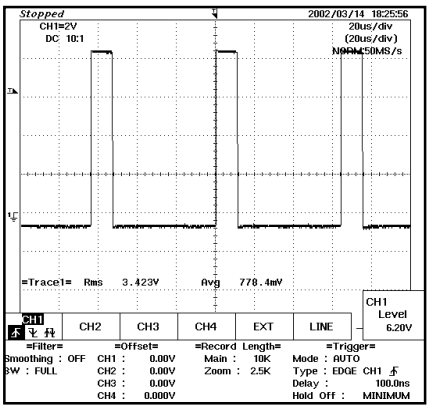
13 Pin13 Vp-p=5.6V


Stopped
2002/03/14 18:22:44
CH1=10V
DC 10:1
5ms/div
(5ms/div)
NORM:200kS/s
=Trace1= Rms 7.591V Avg -213.2mV
CH Position To
-3div -1div 0div +1div +3div
CH1 Position 0.00div
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

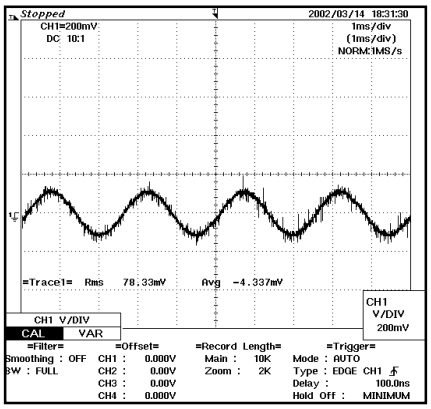
14 Pin14 Vp-p= 70V


Stopped
2002/03/14 18:23:33
CH1=500mV
DC 10:1
5ms/div
(5ms/div)
NORM:200kS/s
=Trace1= Rms 242.0mV Avg -45.45mV
CH1 V/DIV
CAL VAR
CH1 V/DIV 500mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

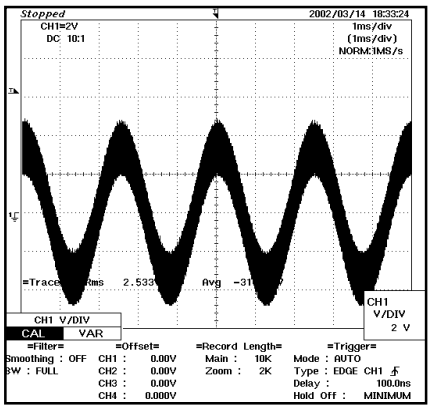
15 Pin15 Vp-p= 2.00V


Stopped
2002/03/14 18:25:56
CH1=2V
DC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 3.423V Avg 770.4mV
CH1 Level 6.20V
CH1 CH2 CH3 CH4 EXT LINE
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

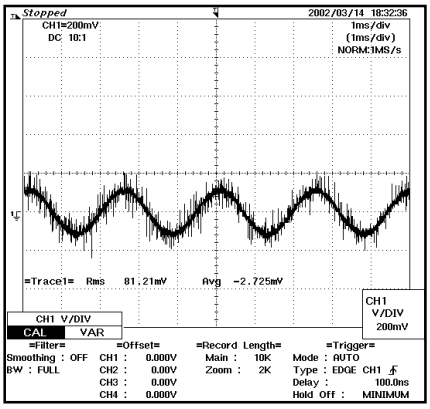
16 Pin16 Vp-p= 9.2V


Stopped
2002/03/14 18:31:30
CH1=200mV
DC 10:1
1ms/div
(1ms/div)
NORM:1MS/s
=Trace1= Rms 78.33mV Avg -4.337mV
CH1 V/DIV 200mV
CH1 V/DIV CAL VAR
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

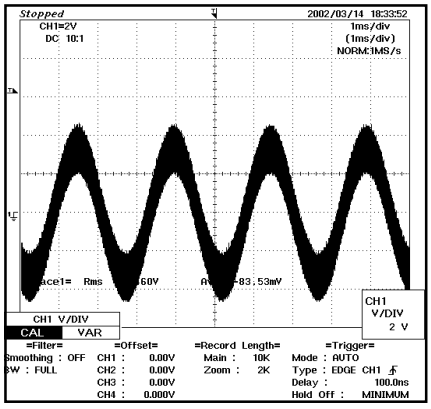
17 Pin17 Vp-p= 0.24V


Stopped
2002/03/14 18:33:24
CH1=2V
DC 10:1
1ms/div
(1ms/div)
NORM:1MS/s
CH1 V/DIV 2 V
CH1 V/DIV CAL VAR
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

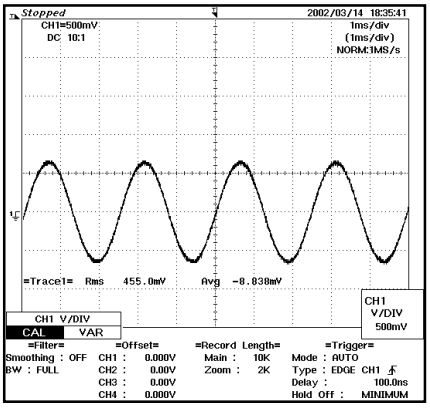
18 Pin18 Vp-p= 9.6V


Stopped
2002/03/14 18:32:36
CH1=200mV
DC 10:1
1ms/div
(1ms/div)
NORM:1MS/s
=Trace1= Rms 81.21mV Avg -2.725mV
CH1 V/DIV 200mV
CH1 V/DIV CAL VAR
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

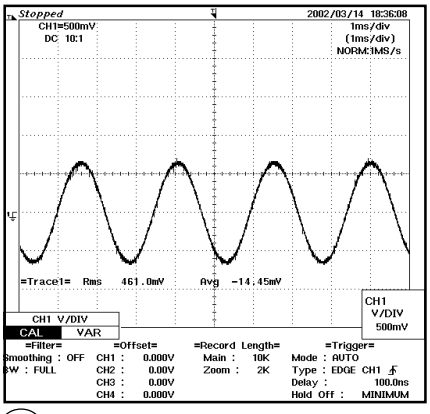
19 Pin19 Vp-p= 0.2V


Stopped
2002/03/14 18:33:52
CH1=2V
DC 10:1
1ms/div
(1ms/div)
NORM:1MS/s
CH1 V/DIV 2 V
CH1 V/DIV CAL VAR
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.00V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

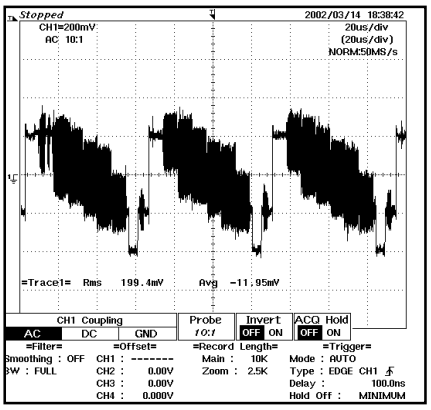
20 Pin20 Vp-p= 9.2V


Stopped
2002/03/14 18:35:41
CH1=500mV
DC 10:1
1ms/div
(1ms/div)
NORM:1MS/s
=Trace1= Rms 455.0mV Avg -8.038mV
CH1 V/DIV 500mV
CH1 V/DIV CAL VAR
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

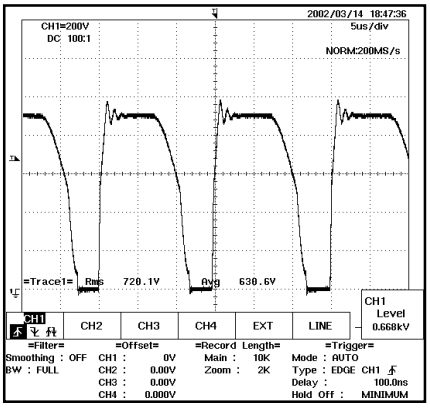
21 Pin21 Vp-p= 1.4V


Stopped
2002/03/14 18:36:08
CH1=500mV
DC 10:1
1ms/div
(1ms/div)
NORM:1MS/s
=Trace1= Rms 461.0mV Avg -14.45mV
CH1 V/DIV 500mV
CH1 V/DIV CAL VAR
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0.000V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

22 Pin22 Vp-p= 1.4V

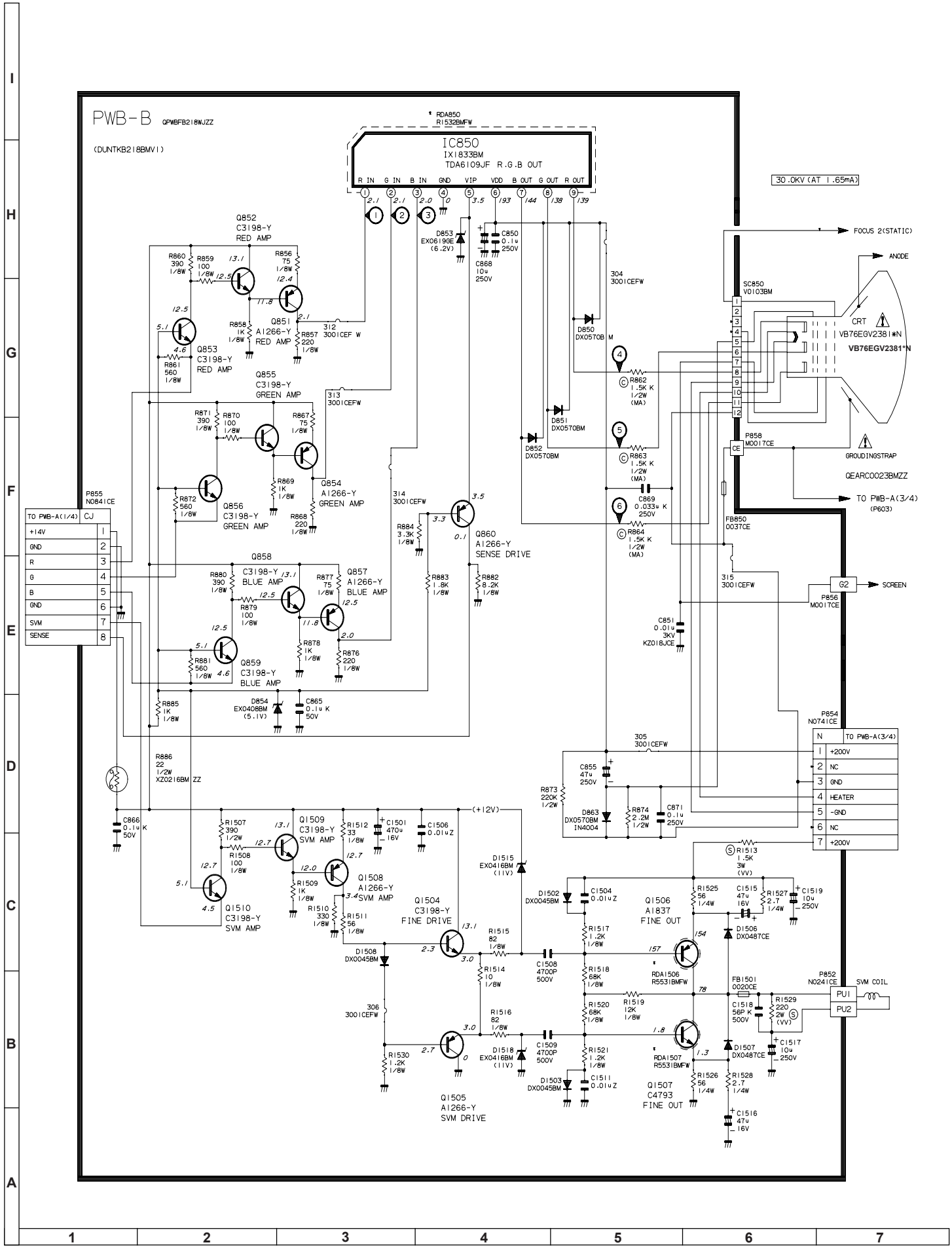

Stopped
2002/03/14 18:38:42
CH1=200mV
AC 10:1
20us/div
(20us/div)
NORM:50MS/s
=Trace1= Rms 199.4mV Avg -11.95mV
CH1 Coupling AC DC GND
Probe 10:1
Invert OFF ON
ACQ Hold OFF ON
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : ------- Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2.5K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

23 Pin23 Vp-p= 0.7V

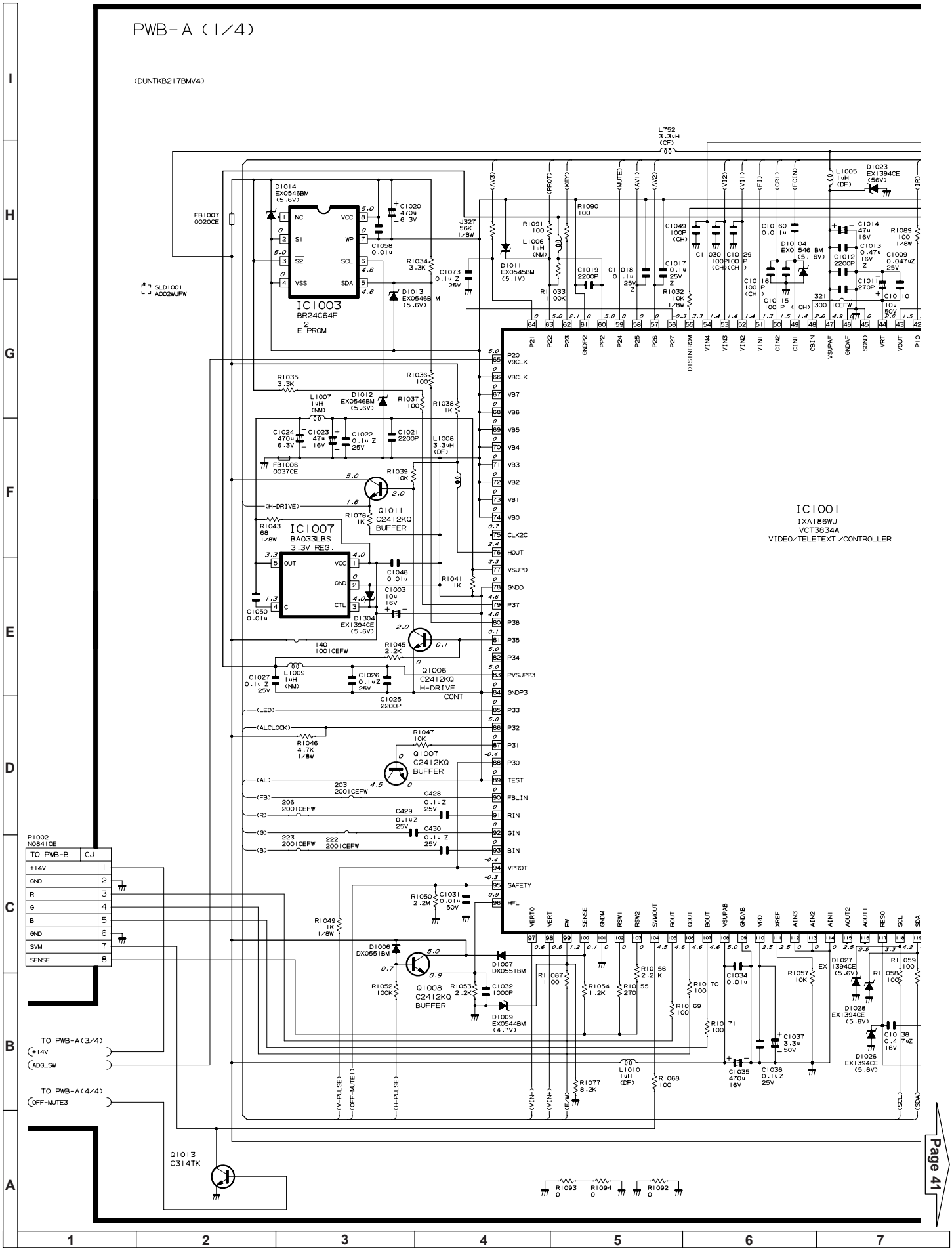

2002/03/14 18:47:36
CH1=200V
DC 100:1
5us/div
NORM:200MS/s
=Trace1= Rms 720.1V Avg 630.6V
CH1 CH2 CH3 CH4 EXT LINE
CH1 Level 0.668kV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : OFF CH1 : 0V Main : 10K Mode : AUTO
BW : FULL CH2 : 0.00V Zoom : 2K Type : EDGE CH1
CH3 : 0.00V Delay : 100.0ns
CH4 : 0.000V Hold Off : MINIMUM

24 Pin24 Vp-p= 500V

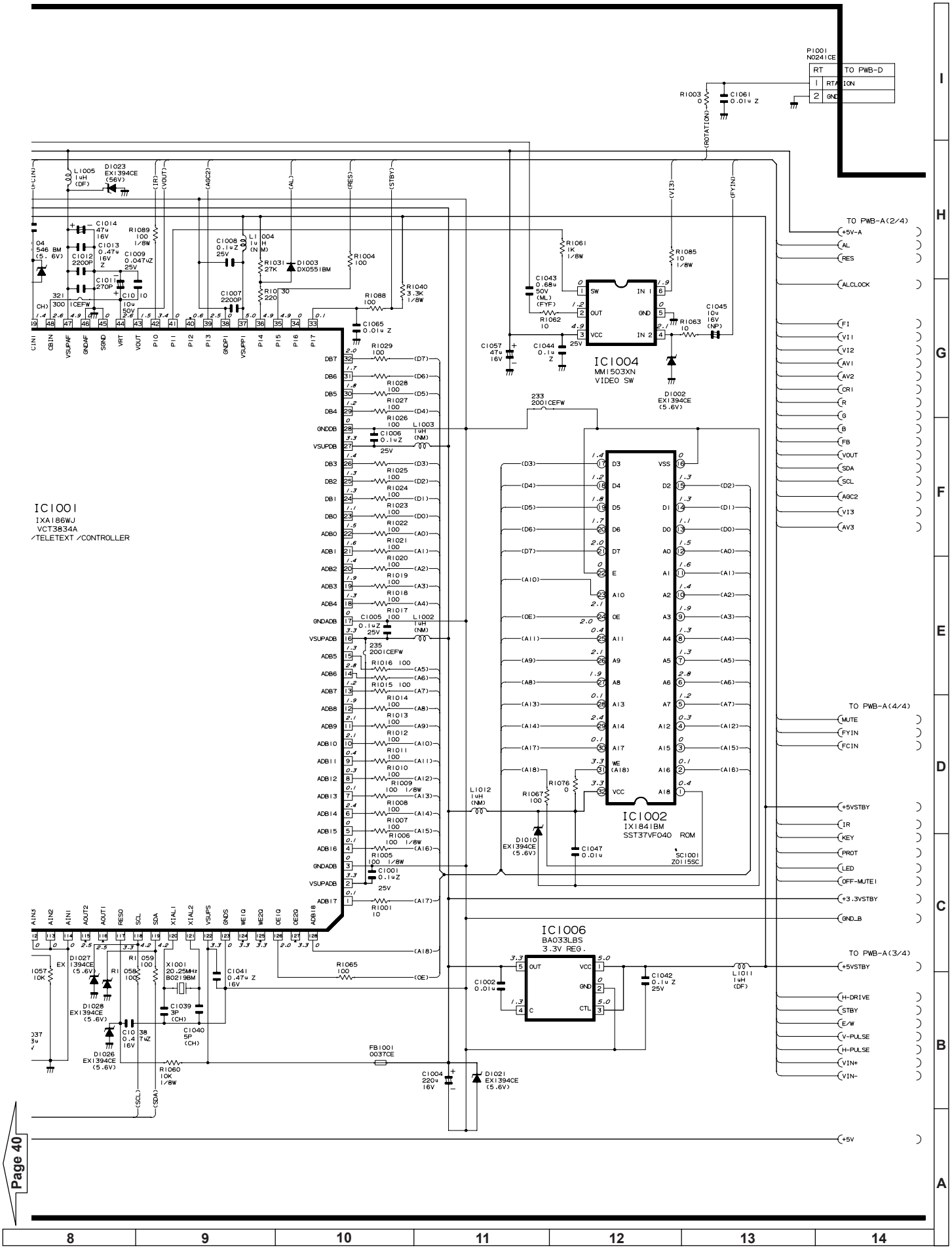
# SCHEMATIC DIAGRAM OF CRT UNIT (FB218N2)



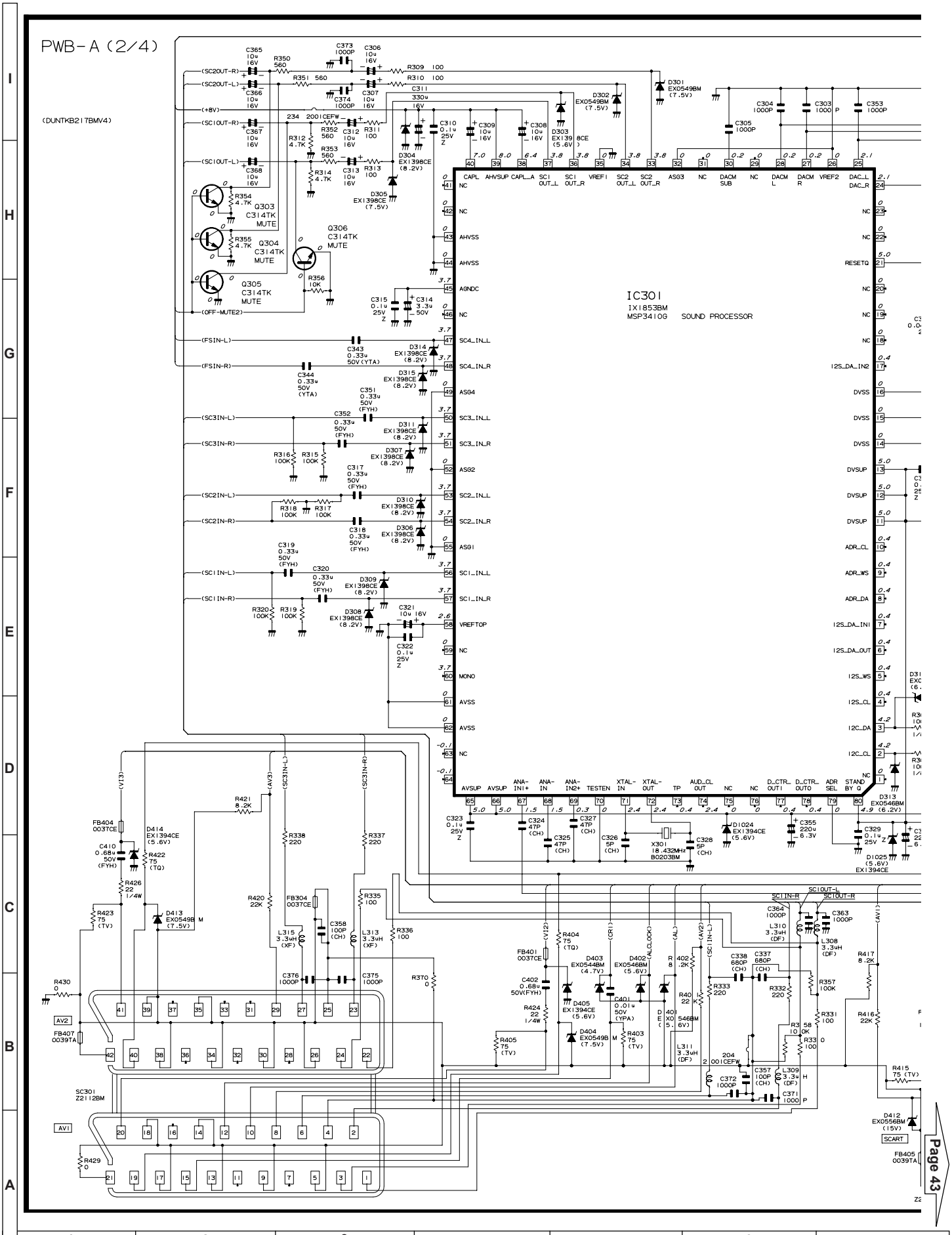
# SCHEMATIC DIAGRAM OF MAIN 1/4 (FB217N5)



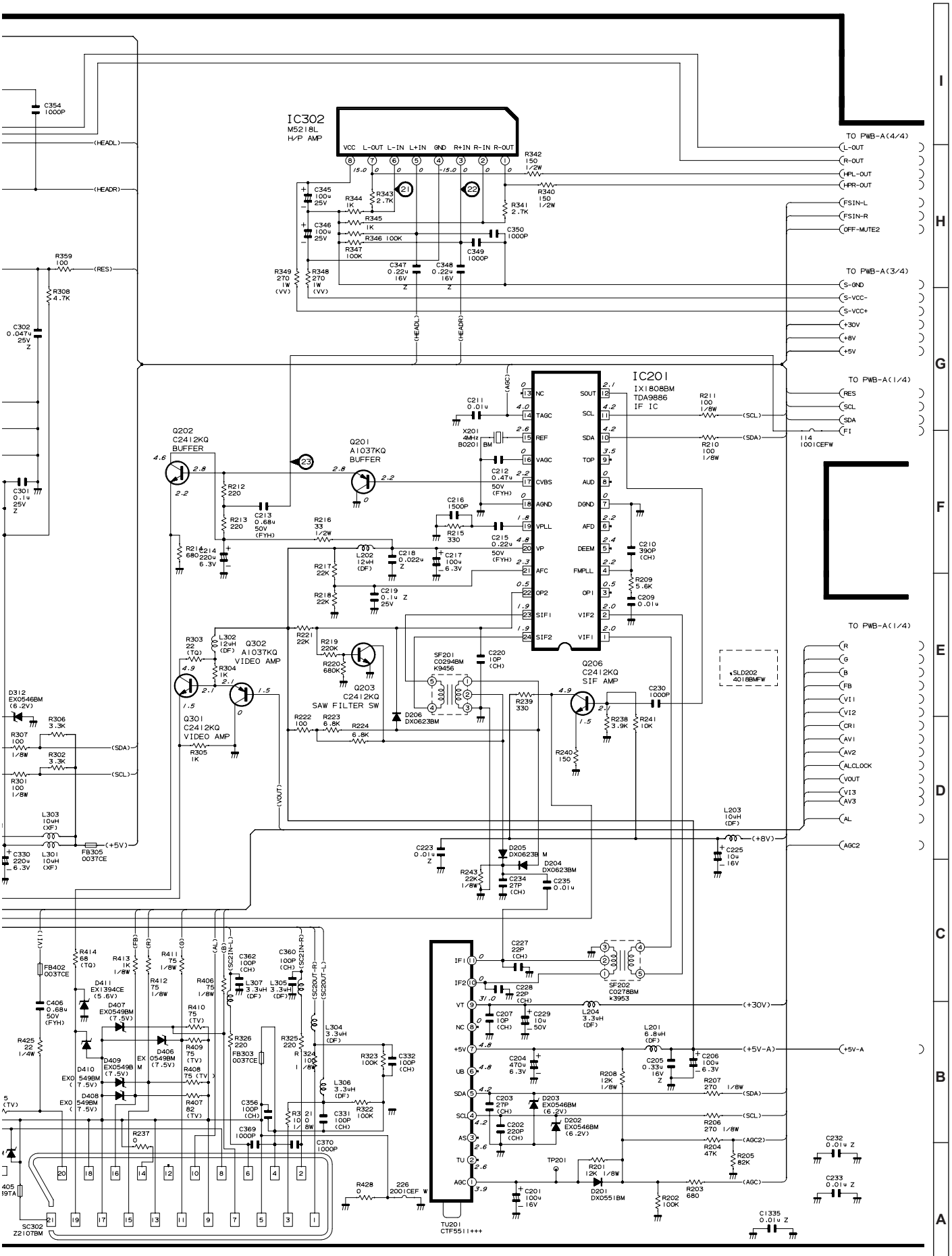
# SCHEMATIC DIAGRAM OF MAIN 1/4 (FB217N5)



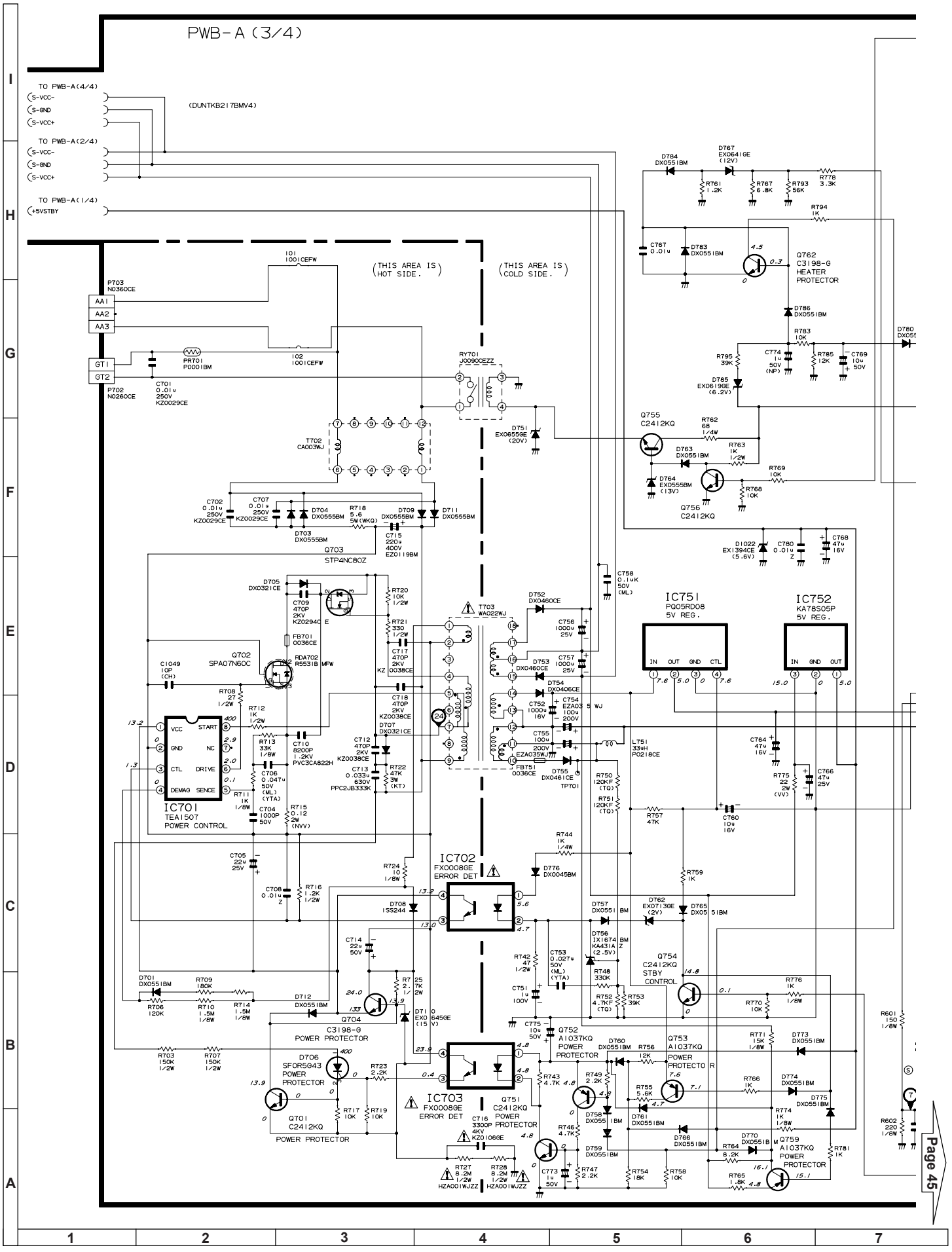
# SCHEMATIC DIAGRAM OF MAIN 2/4 (FB217N5)



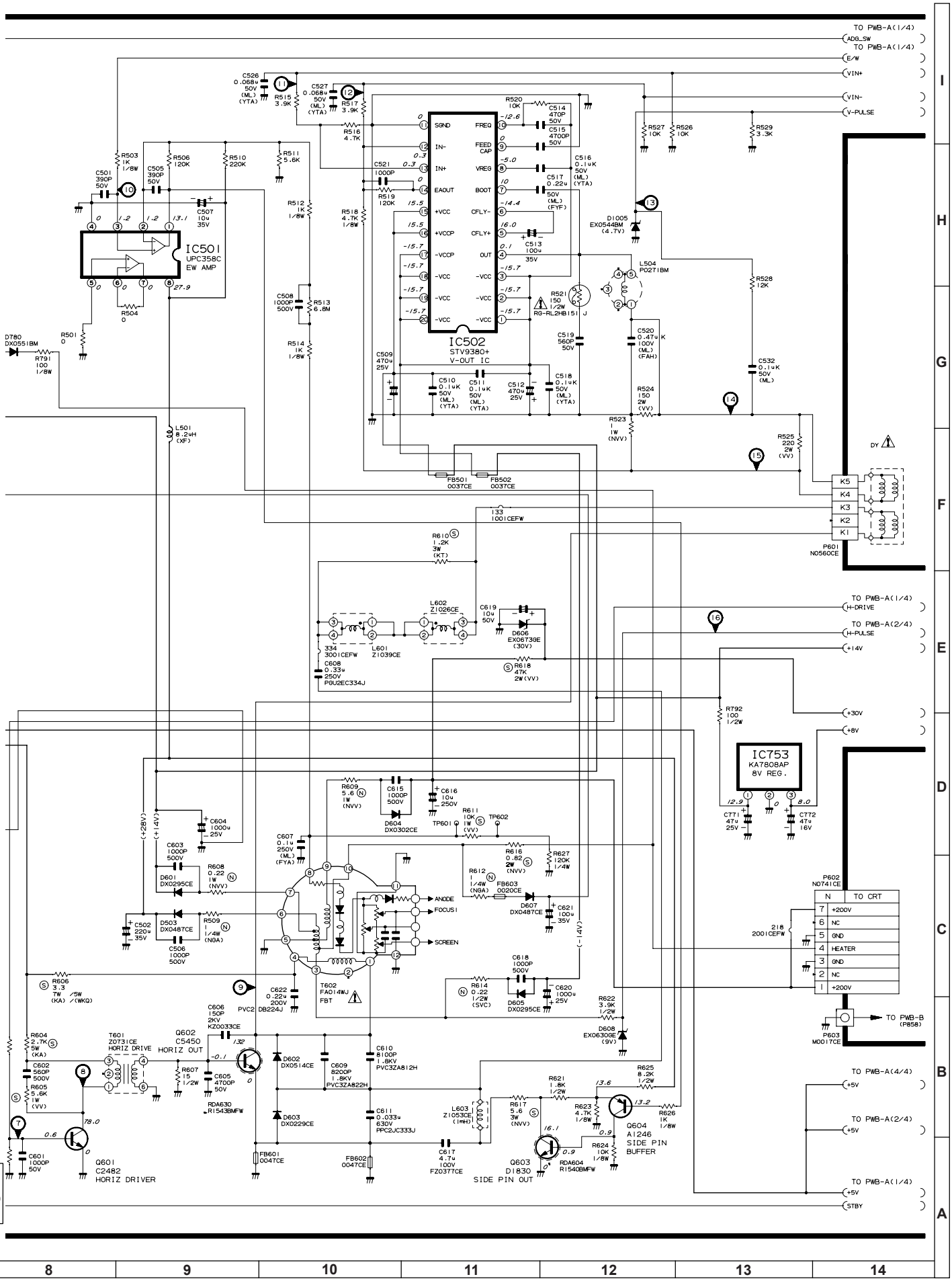
# SCHEMATIC DIAGRAM OF MAIN 2/4 (FB217N5)



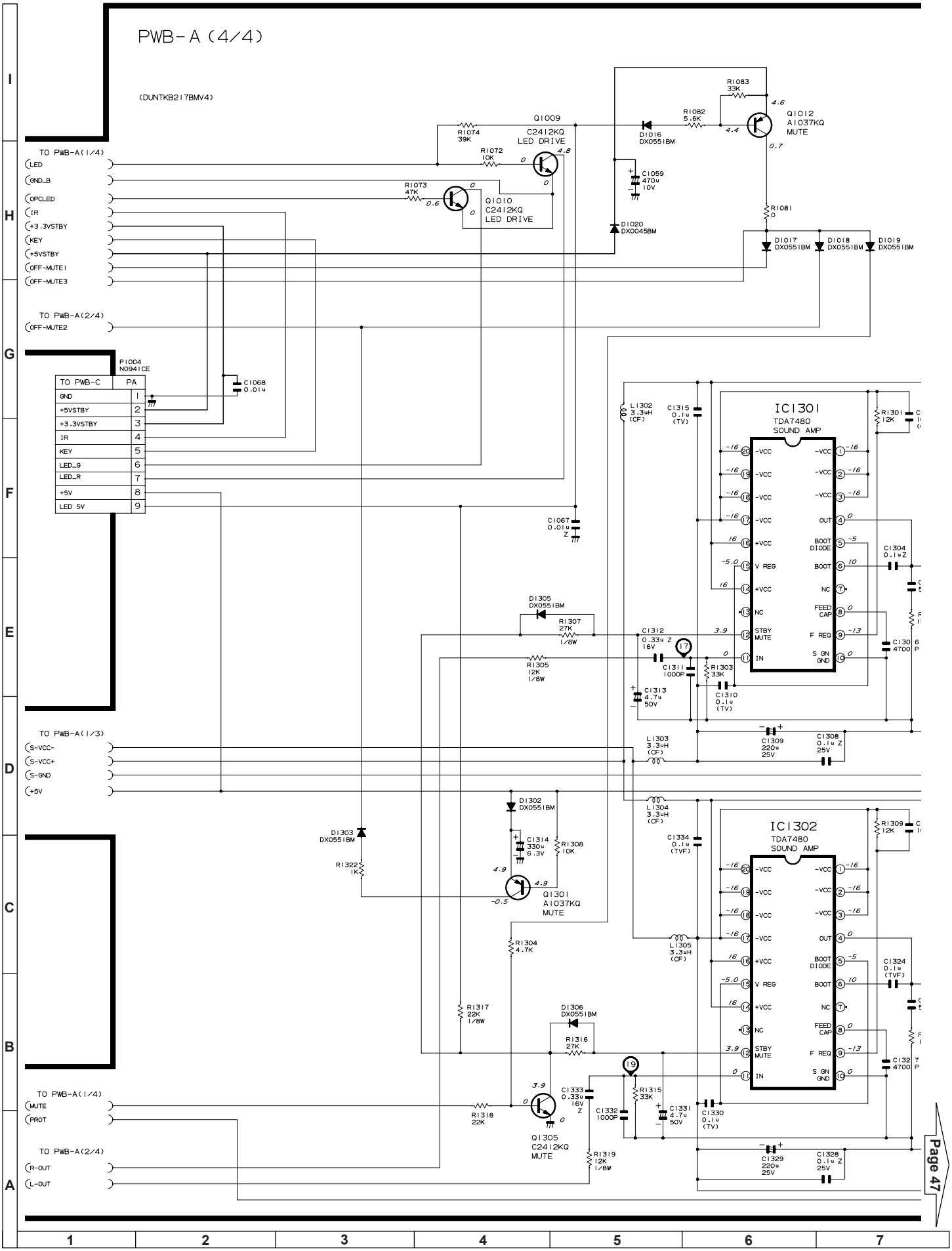
# SCHEMATIC DIAGRAM OF MAIN 3/4 (FB217N5)



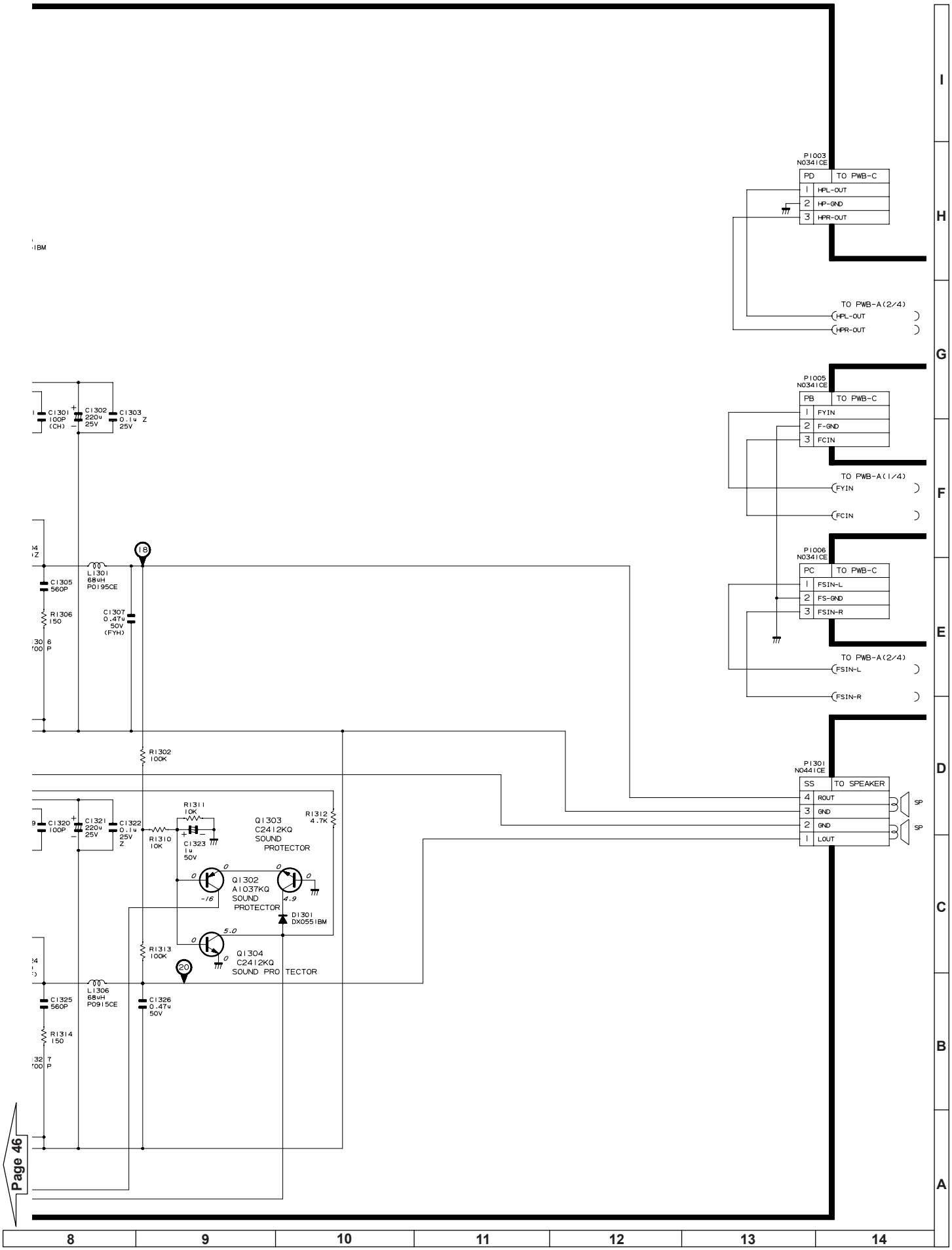
# SCHEMATIC DIAGRAM OF MAIN 3/4 (FB217N5)



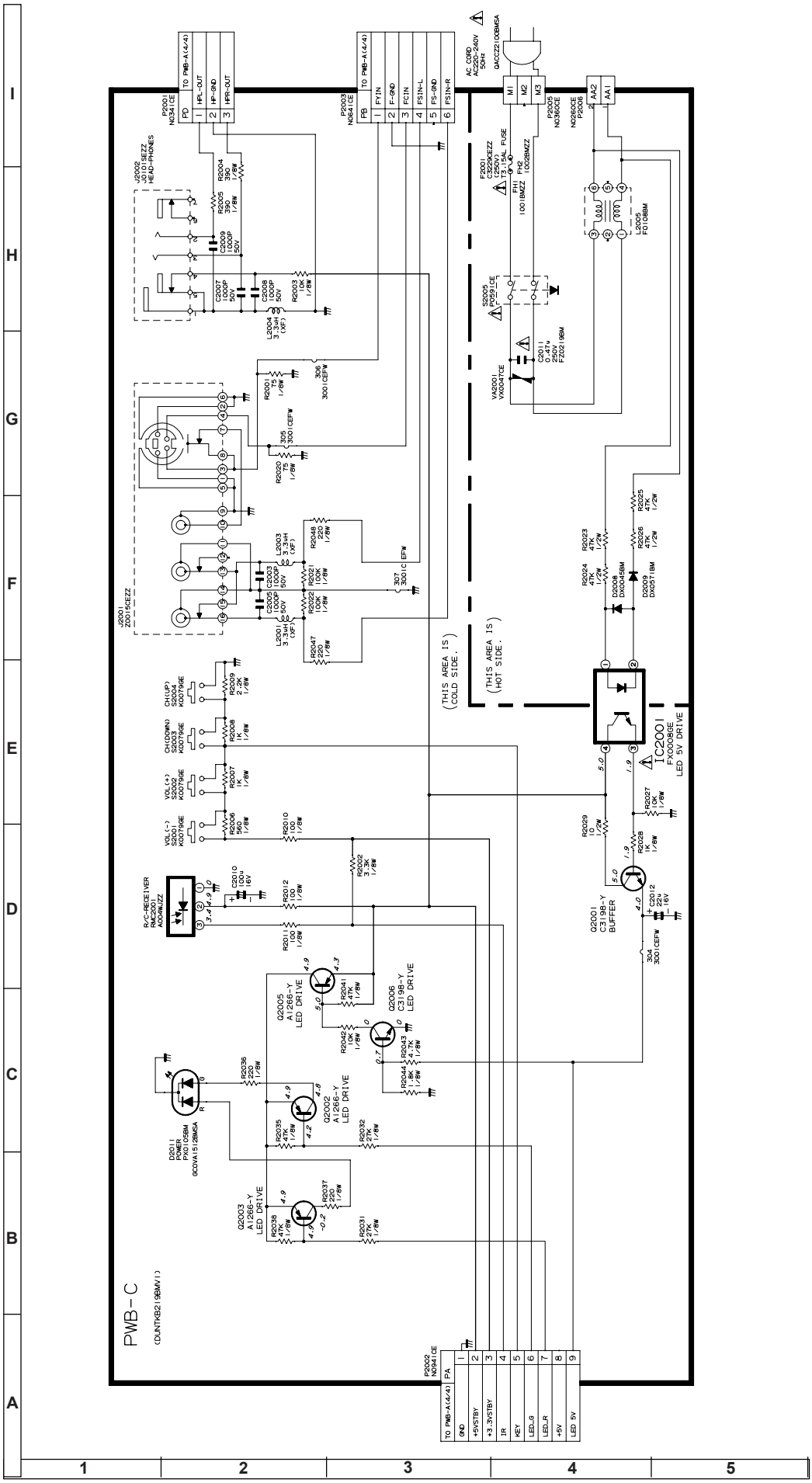
# SCHEMATIC DIAGRAM OF MAIN 4/4 (FB217N5)



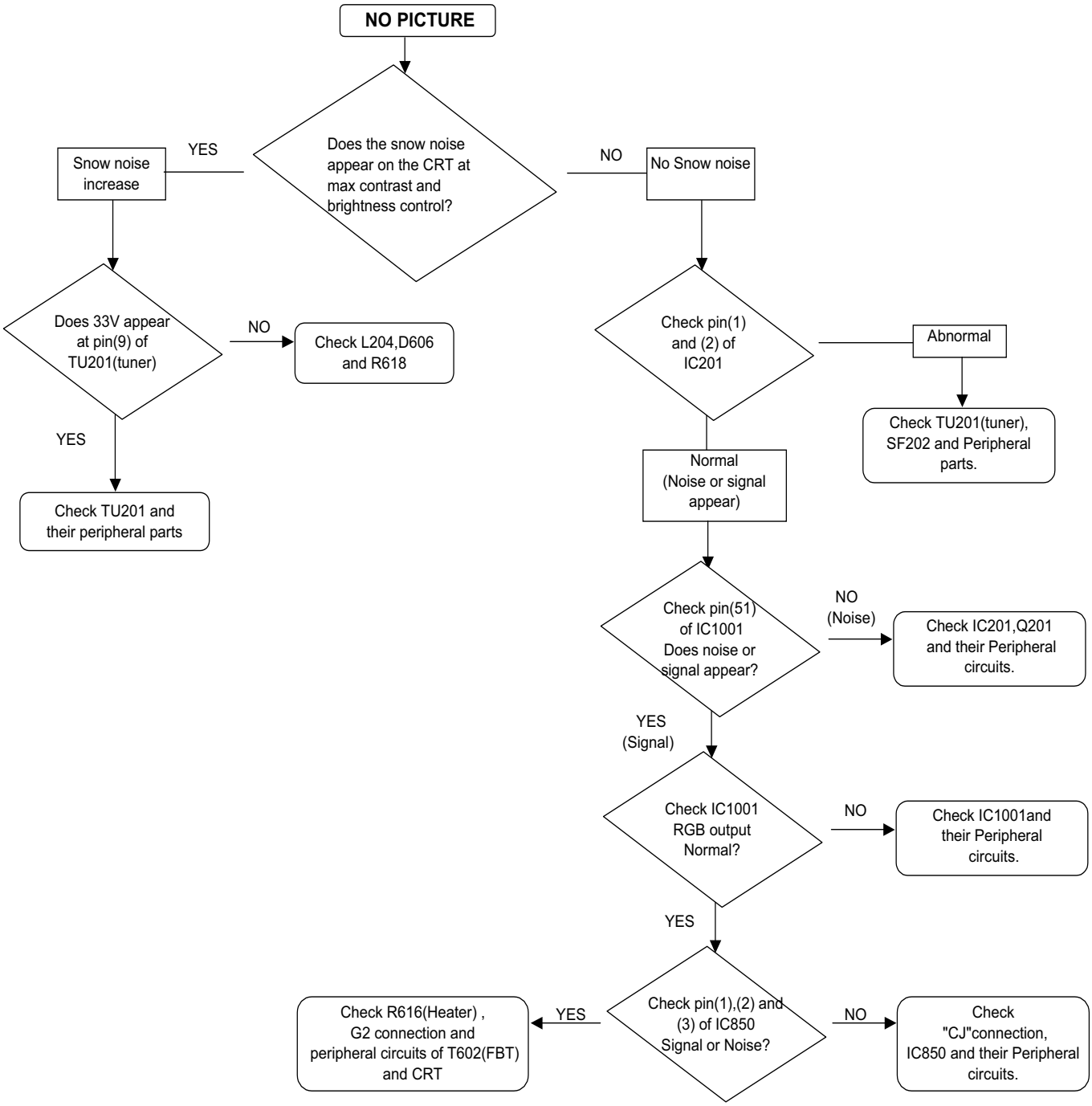
# SCHEMATIC DIAGRAM OF MAIN 4/4 (FB217N5)

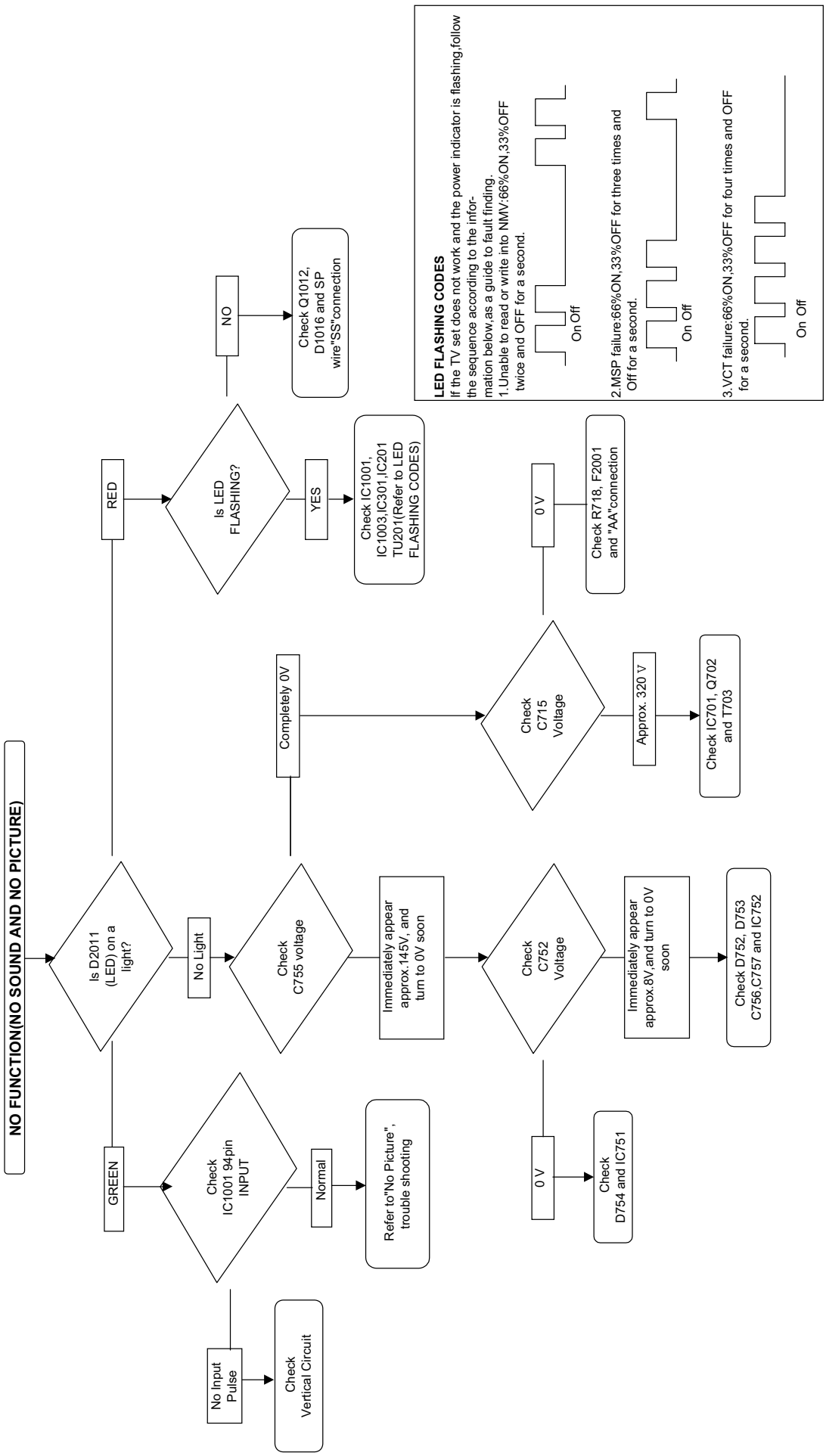


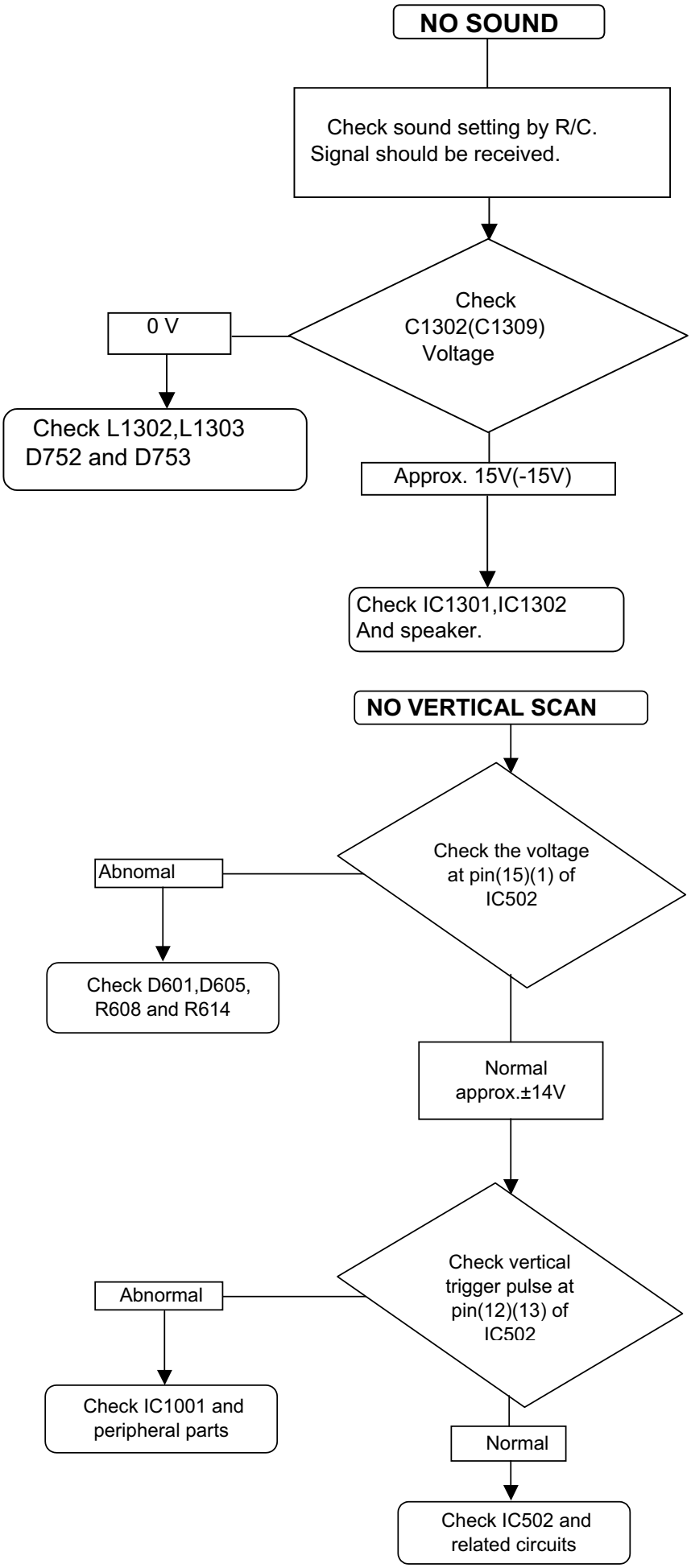
## SCHEMATIC DIAGRAM OF CONTROL UNIT (FB219N1)



# TROUBLESHOOTING TABLES


NO PICTURE
Does the snow noise appear on the CRT at max contrast and brightness control?
YES
Snow noise increase
NO
No Snow noise
Does 33V appear at pin(9) of TU201(tuner)
NO
Check L204,D606 and R618
YES
Check TU201 and their peripheral parts
Check pin(1) and (2) of IC201
Abnormal
Check TU201(tuner), SF202 and Peripheral parts.
Normal (Noise or signal appear)
Check pin(51) of IC1001 Does noise or signal appear?
NO (Noise)
Check IC201,Q201 and their Peripheral circuits.
YES (Signal)
Check IC1001 RGB output Normal?
NO
Check IC1001and their Peripheral circuits.
YES
Check pin(1),(2) and (3) of IC850 Signal or Noise?
YES
Check R616(Heater) , G2 connection and peripheral circuits of T602(FBT) and CRT
NO
Check "CJ"connection, IC850 and their Peripheral circuits.


NO FUNCTION(NO SOUND AND NO PICTURE)
Is D2011 (LED) on a light?
GREEN
RED
No Light
Check IC1001 94pin INPUT
Normal
Refer to"No Picture", trouble shooting
No Input Pulse
Check Vertical Circuit
Check C755 voltage
Completely 0V
Immediately appear approx.145V, and turn to 0V soon
Check C752 Voltage
0 V
Check D754 and IC751
Immediately appear approx.8V,and turn to 0V soon
Check D752, D753 C756,C757 and IC752
Check C715 Voltage
0 V
Check R718, F2001 and "AA"connection
Approx. 320 V
Check IC701, Q702 and T703
Is LED FLASHING?
YES
Check IC1001, IC1003,IC301,IC201 TU201(Refer to LED FLASHING CODES)
NO
Check Q1012, D1016 and SP wire"SS"connection
LED FLASHING CODES
If the TV set does not work and the power indicator is flashing,follow the sequence according to the information below,as a guide to fault finding.
1.Unable to read or write into NMV:66%ON,33%OFF twice and OFF for a second.
On Off
2.MSP failure:66%ON,33%OFF for three times and Off for a second.
On Off
3.VCT failure:66%ON,33%OFF for four times and OFF for a second.
On Off


NO SOUND
Check sound setting by R/C.
Signal should be received.
Check
C1302(C1309)
Voltage
0 V
Check L1302,L1303
D752 and D753
Approx. 15V(-15V)
Check IC1301,IC1302
And speaker.
NO VERTICAL SCAN
Check the voltage
at pin(15)(1) of
IC502
Abnomal
Check D601,D605,
R608 and R614
Normal
approx.±14V
Check vertical
trigger pulse at
pin(12)(13) of
IC502
Abnormal
Check IC1001 and
peripheral parts
Normal
Check IC502 and
related circuits

# PARTS LISTING

## REPLACEMENT PARTS

Replacement parts which have special safety characteristics are identified in this manual. Electrical components having such features are identified by in the Replacement Parts Listing.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended is not permitted.
Replacement parts not shown in this service manual may create shock fire, or other hazards.

## HOW TO ORDER REPLACEMENT PARTS

To have your order completed promptly and correctly please supply the following information.

1. MODEL NUMBER 2. REF. NO.
3. PART NO. 4. DESCRIPTION
5. CODE 6. QUANTITY

MARK *: SPARE PARTS DELIVERY SECTION

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | | | **PICTURE TUBE** | | | |
| ⚠ | | VB76EGV2381*N | 32"SF50HZSingleF W76EGV023X815+DYCONNECT | S | CN | DK |
| | | | **MISCELLANEOUS PARTS** | | | |
| ⚠ | | RCILG0418BMZZ | DEGUSS.COIL ATN01121952 32"16:9 NUCTOR | S | AS | AZ |
| | | LHLDC3009CEFN | ADG COIL HOLDER | S | AA | AB |
| | | LHLDW1514BM00 | HOLDER UNEX 2233 | S | AA | AA |
| | | QEARC0023BMZZ | CABLE EARHT 32" DA-100W | S | AC | AH |
| | | | **PRINTED WIRING BOARDS (Not replacement item)** | | | |
| | | DUNTKB217CJV4 | ADJUST CHASSIS 32JW73E | S | BR | CK |
| | | DUNTKB218BMV1 | CRT UNIT INS HAND 32JW73H | S | AT | BE |
| | | DUNTKB219BMV1 | CONTROL INS HAND 32JW73H | S | AR | BC |
| | **PWB-A** | | **MOTHER UNIT** | | | |
| | | | **TUNER** | | | |
| | TU 0201 | VTUCTF5511+++ | TUNER THOMSON | S | AN | AZ |
| | | | **INTEGRATED CIRCUITS** | | | |
| | IC 0201 | RH-IX1808BMZZ | IC TDA9886TS PHILIPS | S | AG | AS |
| | IC 0301 | RH-IX1853BMZZ | IC MSP3410G-QA-B8 MICRONAS | S | AR | BC |
| | IC 0302 | VHIM5218L//-1 | IC M5218L | S | AA | AD |
| | IC 0501 | VHIUPC358C/-1 | IC UPC358C NEC | S | AE | AE |
| | IC 0502 | VHISTV9380+-1 | IC STV9380 V OUT ST | S | AE | AP |
| | IC 0701 | VHITEA1507/-1 | IC TEA1507P/N1 PHILIPS | S | AC | AH |
| ⚠ | IC 0702 | RH-FX0008GEZZ | P/COUPLER RANK-S SHARP | S | AA | AD |
| ⚠ | IC 0703 | RH-FX0008GEZZ | P/COUPLER RANK-S SHARP | S | AA | AD |
| | IC 0751 | VHIPQ05RD08-1 | IC PQ05RD08 SHARP | S | AC | AH |
| | IC 0752 | VHIKA78S05P-1 | IC KA78S05P KOREA | S | AA | AD |
| | IC 0753 | VHIKA7808AP-1 | IC KIA7808API KOREA ELECTRONICS | S | AA | AE |
| | IC 1001 | RH-IXA186WJZZ | IC VCT3834A MICRONAS | S | AW | BH |
| | IC 1002 | CH-IX1841CJE6 | EPROM SET 4M 3V FLASH 32JW73E | S | AM | AY |
| | IC 1003 | VHIBR24C64F-1 | NVM ROHM 64KBIT BR24C64 | S | AC | AH |
| | IC 1004 | VHIMM1503XN-1 | IC MM1503XNRE MITSUMI | S | AA | AE |
| | IC 1006 | VHIBA033LBS-1 | IC BA033LBSG 3,3V REG ROHM | S | AB | AF |
| | IC 1007 | VHIBA033LBS-1 | IC BA033LBSG 3,3V REG ROHM | S | AB | AF |
| | IC 1301 | VHITDA7480/-1 | IC TDA7480 THOMSON | S | AF | AK |
| | IC 1302 | VHITDA7480/-1 | IC TDA7480 THOMSON | S | AF | AK |
| | | | **TRANSISTORS** | | | |
| | Q 0201 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 0202 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0203 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0206 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0301 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0302 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 0303 | VSDTC314TK/-1 | TRT DTC314TKT146 ROHM | S | AA | AB |
| | Q 0304 | VSDTC314TK/-1 | TRT DTC314TKT146 ROHM | S | AA | AB |
| | Q 0305 | VSDTC314TK/-1 | TRT DTC314TKT146 ROHM | S | AA | AB |
| | Q 0306 | VSDTC314TK/-1 | TRT DTC314TKT146 ROHM | S | AA | AB |
| | Q 0601 | VS2SC2482//-1 | TRT 2SC2482 TOSHIBA | S | AA | AC |
| | Q 0602 | VS2SC5450//1E | TRT 2SC5450-SH4-RG SANYO | S | AF | AQ |
| | Q 0603 | VS2SD1830//1E | TRT S2D1830-CB11 SANYO | S | AB | AF |
| | Q 0604 | VS2SA1246//1E | TRT A1246 SANYO | S | AA | AB |
| | Q 0701 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0702 | VSSPA07N60C-1 | FET SPA07N60C2.A INFINEON | S | AD | AM |
| | Q 0703 | VSSTP4NC80Z1E | MOS FET STP4NC80ZFP TOMEN | S | AC | AH |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | Q 0704 | VS2SC3198-G-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0751 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0752 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 0753 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 0754 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0755 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0756 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 0759 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 0762 | VS2SC3198-G-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 1006 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1007 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1008 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1009 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1010 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1011 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1012 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 1013 | VSDTC314TK/-1 | TRT DTC314TKT146 ROHM | S | AA | AB |
| | Q 1301 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 1302 | VS2SA1037KQ-1 | TRT BC807 SMD | S | AA | AA |
| | Q 1303 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1304 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | Q 1305 | VS2SC2412KQ-1 | TRT 2SC2412 ROHM | S | AA | AA |
| | | | **DIODES** | | | |
| | D 0201 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0202 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 0203 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 0204 | RH-DX0623BMZZ | DIODE BA591 SMD PHILIPS | S | AA | AB |
| | D 0205 | RH-DX0623BMZZ | DIODE BA591 SMD PHILIPS | S | AA | AB |
| | D 0206 | RH-DX0623BMZZ | DIODE BA591 SMD PHILIPS | S | AA | AB |
| | D 0301 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0302 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0303 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0304 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0305 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0306 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0307 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0308 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0309 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0310 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0311 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0312 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 0313 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 0314 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0315 | RH-EX1398CEZZ | ZENER DIODE UDZSTE-178.2B WAKO | S | AA | AB |
| | D 0401 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 0402 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 0403 | RH-EX0544BMZZ | ZENER DIODE TZMC4V7 TFK SMD | S | AA | AA |
| | D 0404 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0405 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 0406 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0407 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0408 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0409 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0410 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0411 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 0412 | RH-EX0556BMZZ | ZENER DIODO TZMC15 TFK SMD | S | AA | AA |
| | D 0413 | RH-EX0549BMZZ | ZENER DIODE TZMC7V5 TFK SMD | S | AA | AA |
| | D 0414 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 0503 | RH-DX0487CEZZ | DIODE 1SR153-400T-31-A ROHM | S | AA | AB |
| | D 0601 | RH-DX0295CEZZ | DIODE RU3AM LF-A5 600V/1.5A/0.4 SANKEN | S | AA | AC |
| | D 0602 | RH-DX0514CEZZ | DIODE RS3FS PREFOR SANKEN | S | AB | AF |
| | D 0603 | RH-DX0229CEZZ | DIODE RU4AM SANKEN | S | AA | AA |
| | D 0604 | RH-DX0302CEZZ | DIODE UZA | S | AA | AB |
| | D 0605 | RH-DX0295CEZZ | DIODE RU3AM LF-A5 600V/1.5A/0.4 SANKEN | S | AA | AC |
| | D 0606 | RH-EX0673GEZZ | ZENER DIODE MTZJ30DT ROHM | S | AA | AA |
| | D 0607 | RH-DX0487CEZZ | DIODE 1SR153-400T-31-A ROHM | S | AA | AB |
| | D 0608 | RH-EX0630GEZZ | ZENER DIODE | S | AA | AA |
| | D 0701 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0703 | RH-DX0555BMZZ | DIODE RF2005 FAGOR | S | AA | AB |
| | D 0704 | RH-DX0555BMZZ | DIODE RF2005 FAGOR | S | AA | AB |
| | D 0705 | RH-DX0321CEZZ | DIODE EG01CV1 SANKEN | S | AA | AD |
| | D 0706 | VHSSF0R5G43-1 | THYRISTOR SF0R5G43(N) TOSHIBA | S | AA | AD |
| | D 0707 | RH-DX0321CEZZ | DIODE EG01CV1 SANKEN | S | AA | AD |
| | D 0708 | VHD1SS244//-1 | SW DIODE 1SS244T-72 | S | AA | AA |
| | D 0709 | RH-DX0555BMZZ | DIODE RF2005 FAGOR | S | AA | AB |
| | D 0710 | RH-EX0645GEZZ | ZENER DIODE | S | AA | AA |
| | D 0711 | RH-DX0555BMZZ | DIODE RF2005 FAGOR | S | AA | AB |
| | D 0712 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | D 0751 | RH-EX0655GEZZ | ZENER DIODE MTZJ20BT ROHM | S | AA | AA |
| | D 0752 | RH-DX0460CEZZ | DIODE RU30ZLF0140-302 SANKEN | S | AA | AD |
| | D 0753 | RH-DX0460CEZZ | DIODE RU30ZLF0140-302 SANKEN | S | AA | AD |
| | D 0754 | RH-DX0406CEZZ | DIODE RK16V SANKEN | S | AA | AD |
| | D 0755 | RH-DX0461CEZZ | DIODE RU4AMLF-M1 SANKEN | S | AA | AD |
| | D 0756 | RH-IX1674BMZZ | IC KA431AZ SAMSUNG | S | AA | AD |
| | D 0757 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0758 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0759 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0760 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0761 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0762 | RH-EX0713GEZZ | ZENER DIODE MTZJ2.0A ROHM | S | AA | AA |
| | D 0763 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0764 | RH-EX0555BMZZ | ZENER DIODE TZMC13 TFK SMD | S | AA | AA |
| | D 0765 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0766 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0767 | RH-EX0641GEZZ | ZENER DIODE MTZJ12CT ROHM | S | AA | AA |
| | D 0770 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0773 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0774 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0775 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0776 | RH-DX0045BMZZ | DIODE 1N4148 | S | AA | AA |
| | D 0780 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0783 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0784 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 0785 | RH-EX0619GEZZ | ZENER DIODE 6.2V B3 | S | AA | AA |
| | D 0786 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1002 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1003 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1004 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 1005 | RH-EX0544BMZZ | ZENER DIODE TZMC4V7 TFK SMD | S | AA | AA |
| | D 1006 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1007 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1009 | RH-EX0544BMZZ | ZENER DIODE TZMC4V7 TFK SMD | S | AA | AA |
| | D 1010 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1011 | RH-EX0545BMZZ | ZENER DIODE TZMC5V1 TFK SMD | S | AA | AA |
| | D 1012 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 1013 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 1014 | RH-EX0546BMZZ | ZENER DIODE TZMC5V6 TFK SMD | S | AA | AA |
| | D 1016 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1017 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1018 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1019 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1020 | RH-DX0045BMZZ | DIODE 1N4148 | S | AA | AA |
| | D 1021 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1022 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1023 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1024 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1025 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1026 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1027 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1028 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1301 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1302 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1303 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1304 | RH-EX1394CEZZ | ZENER DIODE UDZSTE-175.6B WAKO | S | AA | AB |
| | D 1305 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | D 1306 | RH-DX0551BMZZ | DIODE LL4148 TFK SMD | S | AA | AA |
| | | | **PACKAGED CIRCUITS** | | | |
| | X 0201 | RCRSB0201BMZZ | CRYSTAL 4 MHZ | S | AK | AM |
| | X 0301 | RCRSB0203BMZZ | CRYSTAL 18.432 MHZ | S | AD | AG |
| | X 1001 | RCRSB0219BMZZ | CRYSTAL 20.25 HMZ | S | AG | AH |
| | | | **COILS** | | | |
| | L 0201 | VP-DF6R8K0000 | PEAK COIL 6,8UH 10% | S | AA | AA |
| | L 0202 | VP-DF120K0000 | PEAK COIL 12UH 10% | S | AA | AA |
| | L 0203 | VP-DF100K0000 | PEAK COIL 10UH 10% | S | AA | AA |
| | L 0204 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0301 | VP-XF100K0000 | PEAK COIL 10UH 10% 1/8W | S | AA | AA |
| | L 0302 | VP-DF120K0000 | PEAK COIL 12UH 10% | S | AA | AA |
| | L 0303 | VP-XF100K0000 | PEAK COIL 10UH 10% 1/8W | S | AA | AA |
| | L 0304 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0305 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0306 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0307 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0308 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0309 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0310 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | L 0311 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 0313 | VP-XF3R3K0000 | PEAK COIL 3.3UH 10% 1/8W | S | AA | AB |
| | L 0315 | VP-XF3R3K0000 | PEAK COIL 3.3UH 10% 1/8W | S | AA | AB |
| | L 0501 | VP-XF8R2K0000 | PEAKING COIL 8.2M-H | S | AA | AA |
| | L 0504 | RCILP0271BMZZ | COIL BC-400/K DIEMEN | S | AD | AG |
| | L 0601 | RCILZ1039CEZZ | COIL LH13PA28FRT4-A 55uH 10% TAIYO YUDEN | S | AC | AH |
| | L 0602 | RCILZ1026CEZZ | COIL 30uH LH-16PA-29FR-TA-A TAIYO | S | AD | AL |
| | L 0603 | RCILZ1053CEZZ | COIL 1mH 10% 0155013400-A | S | AB | AG |
| | L 0751 | RCILP0218CEZZ | BOB 33uH 10% FLR88-A | S | AA | AD |
| | L 0752 | VP-CF3R3K0000 | PEAK COIL 3.3UH 10% | S | AB | AB |
| | L 1002 | VP-NM1R0MR10N | COIL 1UH SMD | S | AB | AB |
| | L 1003 | VP-NM1R0MR10N | COIL 1UH SMD | S | AB | AB |
| | L 1004 | VP-NM1R0MR10N | COIL 1UH SMD | S | AB | AB |
| | L 1005 | VP-DF1R0K0000 | PEAKING COIL 1.0 U-H | S | AA | AA |
| | L 1006 | VP-NM1R0MR10N | COIL 1UH SMD | S | AB | AB |
| | L 1007 | VP-DF1R0K0000 | PEAKING COIL 1.0 U-H | S | AA | AA |
| | L 1008 | VP-DF3R3K0000 | PEAK COIL 3,3UH 10% | S | AB | AB |
| | L 1009 | VP-NM1R0MR10N | COIL 1UH SMD | S | AB | AB |
| | L 1010 | VP-DF1R0K0000 | PEAKING COIL 1.0 U-H | S | AA | AA |
| | L 1011 | VP-DF1R0K0000 | PEAKING COIL 1.0 U-H | S | AA | AA |
| | L 1012 | VP-NM1R0MR10N | COIL 1UH SMD | S | AB | AB |
| | L 1301 | RCILP0312BMZZ | COIL A823MY-680K=R TOKO | S | AA | AD |
| | L 1302 | VP-CF3R3K0000 | PEAK COIL 3.3UH 10% | S | AB | AB |
| | L 1303 | VP-CF3R3K0000 | PEAK COIL 3.3UH 10% | S | AB | AB |
| | L 1304 | VP-CF3R3K0000 | PEAK COIL 3.3UH 10% | S | AB | AB |
| | L 1305 | VP-CF3R3K0000 | PEAK COIL 3.3UH 10% | S | AB | AB |
| | L 1306 | RCILP0312BMZZ | COIL A823MY-680K=R TOKO | S | AA | AD |
| | | | **CERAMIC FILTERS** | | | |
| | SF 0201 | RFILC0294BMZZ | SAW FILTER K9456 EPCOS | S | AA | AA |
| | SF 0202 | RFILC0278BMZZ | SAW FILTER K3953M SIEMENS | S | AK | AM |
| | | | **TRANSFORMERS** | | | |
| | T 0601 | RTRNZ0731CEZZ | H-DRIVE TRANS | S | AB | AG |
| ⚠ | T 0602 | RTRNFA014WJZZ | FBT BW02862 HITACHI | S | AQ | BB |
| ⚠ | T 0702 | RTRNCA003WJZZ | TRANS. | S | AE | AP |
| ⚠ | T 0703 | RTRNWA022WJZZ | TRANS WA022WJ SANKEN | S | AE | AP |
| | | | **CAPACITORS** | | | |
| | C 0201 | VCEA0A1CW107M | ELEC C 100UF 20% 16V | S | AA | AA |
| | C 0202 | VCCCCY1HH221J | S. CHIP CAP 220PF/50V TAPED | S | AA | AA |
| | C 0203 | VCCCCY1HH270J | S. CHIP CAP 27PF/50V (TAPED) | S | AA | AA |
| | C 0204 | VCEA0A0JW477M | E CAPACITOR 470UF/6.3V 6.3X11 | S | AA | AA |
| | C 0205 | VCKYCY1CF334Z | S. CHIP CAP. 0.33UF/16V TAPED | S | AA | AA |
| | C 0206 | VCEA0A0JW107M | ELEC C 100UF 20% 6,3V | S | AA | AA |
| | C 0207 | VCCCCY1HH100D | S. CAPACITOR 10PF/50V | S | AA | AA |
| | C 0209 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| | C 0210 | VCCCCY1HH391J | GRM39CK 391J 50 (1608)SMD CAPACITOR | S | AA | AA |
| | C 0211 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| | C 0212 | VCFYFA1HA474J | FILM CAPACITOR 474 MAT | S | AA | AB |
| | C 0213 | VCFYFA1HA684J | POL FILM C 680NF 5% 50V | S | AA | AB |
| | C 0214 | VCEA0A0JW227M | E CAPACITOR 220UF/6.3V-5X11 | S | AA | AA |
| | C 0215 | VCFYFA1HA224J | PP FILM C 220NF 5% 50V | S | AA | AA |
| | C 0216 | VCKYCY1HB152K | GRM39B 152K 50 (1608)SMD CAPACITOR | S | AA | AA |
| | C 0217 | VCEA0A0JW107M | ELEC C 100UF 20% 6,3V | S | AA | AA |
| | C 0218 | VCKYCY1HF223Z | SC CAPACITOR 0.022UF 50V TAPED | S | AA | AA |
| | C 0219 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| | C 0220 | VCCCCY1HH100D | S. CAPACITOR 10PF/50V | S | AA | AA |
| | C 0223 | VCKYCY1HF103Z | CHIP CAP 0.01UF/50V | S | AA | AA |
| | C 0225 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| | C 0227 | VCCCCY1HH220J | S. CHIP CAP 22PF/50V TAPED | S | AA | AA |
| | C 0228 | VCCCCY1HH220J | S. CHIP CAP 22PF/50V TAPED | S | AA | AA |
| | C 0229 | VCEA0A1HW106M | ELEC C 10UF 20% 50V | S | AA | AA |
| | C 0230 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| | C 0232 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| | C 0233 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| | C 0234 | VCCCCY1HH270J | S. CHIP CAP 27PF/50V (TAPED) | S | AA | AA |
| | C 0235 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| | C 0301 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| | C 0302 | VCKYCY1EF473Z | C CAPACITOR 0.047UF/25V TAPED | S | AA | AA |
| | C 0303 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| | C 0304 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| | C 0305 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| | C 0306 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| | C 0307 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| | C 0308 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| | C 0309 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| | C 0310 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| | C 0311 | VCEA0A1CW337M | ELEC C 330UF 20% 16V | S | AA | AA |

| REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|
| C 0312 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0313 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0314 | VCEA0A1HW335M | ELEC C 3,3UF 20% 50V | S | AA | AA |
| C 0315 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0317 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0318 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0319 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0320 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0321 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0322 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0323 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0324 | VCCCCY1HH470J | S. CHIP CAP 47PF/50V (TAPED) | S | AA | AA |
| C 0325 | VCCCCY1HH470J | S. CHIP CAP 47PF/50V (TAPED) | S | AA | AA |
| C 0326 | VCCCCY1HH5R0C | S. CAPACITOR TAPED | S | AA | AA |
| C 0327 | VCCCCY1HH470J | S. CHIP CAP 47PF/50V (TAPED) | S | AA | AA |
| C 0328 | VCCCCY1HH5R0C | S. CAPACITOR TAPED | S | AA | AA |
| C 0329 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0330 | VCEA0A0JW227M | E CAPACITOR 220UF/6.3V-5X11 | S | AA | AA |
| C 0331 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0332 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0337 | VCCCCY1HH681J | GRM39CK 681J 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 0338 | VCCCCY1HH681J | GRM39CK 681J 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 0343 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0344 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0345 | VCEA0A1EW107M | E. CAPACITOR 100UF 25V 6.3x11 | S | AA | AA |
| C 0346 | VCEA0A1EW107M | E. CAPACITOR 100UF 25V 6.3x11 | S | AA | AA |
| C 0347 | VCKYCY1CF224Z | S.C.CAP 0.22UF 16V TAPED | S | AA | AA |
| C 0348 | VCKYCY1CF224Z | S.C.CAP 0.22UF 16V TAPED | S | AA | AA |
| C 0349 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0350 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0351 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0352 | VCFYFA1HA334J | POL FILM C 330NF 5% 50V | S | AA | AA |
| C 0353 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0354 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0355 | VCEA0A0JW227M | E CAPACITOR 220UF/6.3V-5X11 | S | AA | AA |
| C 0356 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0357 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0358 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0360 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0362 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 0363 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0364 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0365 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0366 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0367 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0368 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0369 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0370 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0371 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0372 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0373 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0374 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0375 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0376 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0401 | VCKYPA1HB103K | CERAMIC CAPACITOR 10NF10% 50V | S | AA | AA |
| C 0402 | VCFYFA1HA684J | POL FILM C 680NF 5% 50V | S | AA | AB |
| C 0406 | VCFYFA1HA684J | POL FILM C 680NF 5% 50V | S | AA | AB |
| C 0410 | VCFYFA1HA684J | POL FILM C 680NF 5% 50V | S | AA | AB |
| C 0428 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0429 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0430 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 0501 | VCKYPA1HB391K | CERAM C 390PF 10% 50V | S | AA | AA |
| C 0502 | VCEA0A1VW227M | ELEC C 220UF 20% 35V | S | AA | AA |
| C 0505 | VCKYPA1HB391K | CERAM C 390PF 10% 50V | S | AA | AA |
| C 0506 | VCKYPA2HB102K | CERAM C 1NF 10% 500V | S | AA | AA |
| C 0507 | VCEA0A1VW106M | ELEC C 10UF 20% 35V | S | AA | AA |
| C 0508 | VCKYPA2HB102K | CERAM C 1NF 10% 500V | S | AA | AA |
| C 0509 | VCEA0A1EW477M | ELEC C 470UF 20% 25V | S | AA | AB |
| C 0510 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| C 0511 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| C 0512 | VCEA0A1EW477M | ELEC C 470UF 20% 25V | S | AA | AB |
| C 0513 | VCEA0A1VW107M | ELEC C 100UF 35V | S | AA | AA |
| C 0514 | VCKYPA1HB471K | CERAM C 470PF 10% 50V | S | AA | AA |
| C 0515 | VCKYPA1HB472K | CERAM C 4,7NF 10% 50V | S | AA | AA |
| C 0516 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| C 0517 | VCFYFA1HA224J | PP FILM C 220NF 5% 50V | S | AA | AA |
| C 0518 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| C 0519 | VCKYPA1HB561K | CERAM C 560PF 10% 50V | S | AA | AA |
| C 0520 | VCFYAH2AA474K | PP FILM C 470NF 10% 100V | S | AA | AD |
| C 0521 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 0526 | VCQYTA1HM683J | POL FILM C 68NF 5% 50V | S | AA | AB |
| C 0527 | VCQYTA1HM683J | POL FILM C 68NF 5% 50V | S | AA | AB |
| C 0601 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| C 0602 | VCKYPA2HB561K | C CERAM 560PF 10% 500V | S | AA | AA |
| C 0603 | VCKYPA2HB102K | CERAM C 1NF 10% 500V | S | AA | AA |
| C 0604 | VCEA0A1EW108M | ELEC C 1000UF 20% 25V | S | AA | AC |
| C 0605 | VCKYPA1HB472K | CERAM C 4,7NF 10% 50V | S | AA | AA |
| C 0606 | RC-KZ0033CEZZ | CERAM C 150PF 2KV MURATA | S | AA | AB |
| C 0607 | VCFYAA2EA104J | POL FILM C 100NF 5% 250V | S | AA | AC |
| C 0608 | VCFPGU2EC394J | PP FILM C 390NF 5% 250V | S | AB | AE |
| C 0609 | VCFPVC3ZA822H | PP FILM C 8,2NF 3% 1.8KV | S | AA | AC |
| C 0610 | VCFPVC3ZA812H | PP FILM C 8,1NF 3% 1.8KV | S | AA | AC |
| C 0611 | VCQPPC2JB333J | POL FILM C 33NF 5% 630V | S | AA | AC |
| C 0615 | VCKYPA2HB102K | CERAM C 1NF 10% 500V | S | AA | AA |
| C 0616 | VCEA0A2EW106M | ELEC C 10UF 20% 250V | S | AA | AB |
| C 0617 | RC-FZ0377CEZZ | PP FILM C 4,7uF 63V | S | AB | AE |
| C 0618 | VCKYPA2HB102K | CERAM C 1NF 10% 500V | S | AA | AA |
| C 0619 | VCEA0A1HW106M | ELEC C 10UF 20% 50V | S | AA | AA |
| C 0620 | VCEA0A1EW108M | ELEC C 1000UF 20% 25V | S | AA | AC |
| C 0621 | VCEA0A1VW107M | ELEC C 100UF 35V | S | AA | AA |
| C 0622 | VCFPVC2DB224J | PP FILM C 220NF 5% 200V | S | AA | AB |
| C 0701 | RC-KZ0029CEZZ | CERAM C 10NF 80,20% 250V | S | AC | AC |
| C 0702 | RC-KZ0029CEZZ | CERAM C 10NF 80,20% 250V | S | AC | AC |
| C 0704 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| C 0705 | VCEA0A1EW226M | ELEC C 22UF 20% 25V | S | AA | AA |
| C 0706 | VCQYTA1HM473J | FILM POL C 47NF 5% 50V | S | AA | AA |
| C 0707 | RC-KZ0029CEZZ | CERAM C 10NF 80,20% 250V | S | AC | AC |
| C 0708 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| C 0709 | RC-KZ0296CEZZ | CERAM C 470PF 2KV MURATA | S | AA | AB |
| C 0710 | VCFPVC3CA822H | PP FILM C 8,2NF 3% 1.6KV | S | AA | AD |
| C 0712 | RC-KZ0038CEZZ | CERAM C 470PF 2KV | S | AA | AB |
| C 0713 | VCQPPC2JB333K | POL FILM C 33NF 10% 630V | S | AA | AB |
| C 0714 | VCEA0A1HW226M | ELEC C 22UF 20% 50V | S | AA | AA |
| C 0715 | RC-EZ0119BMZZ | C ELEC 220uF 385V B43303-H227-M SIEMENS | S | AF | AR |
| △ C 0716 | RC-KZ0106GEZZ | CERAM C DE1410 E332M-KX | S | AB | AC |
| C 0717 | RC-KZ0038CEZZ | CERAM C 470PF 2KV | S | AA | AB |
| C 0718 | RC-KZ0038CEZZ | CERAM C 470PF 2KV | S | AA | AB |
| C 0751 | VCEA0A2AW105M | ELEC C 1UF 20% 100V | S | AA | AA |
| C 0752 | VCEA0A1CW108M | ELEC C 1000MF 16V 10X16MM | S | AA | AB |
| C 0753 | VCQYTA1HM273J | F. CAPACITOR 0.027 U-F | S | AA | AA |
| C 0754 | RC-EZA035WJZZ | ELEC C 100UF 200V LOW INPEDANCE | S | AB | AF |
| C 0755 | RC-EZA035WJZZ | ELEC C 100UF 200V LOW INPEDANCE | S | AB | AF |
| C 0756 | VCEA0A1EW108M | ELEC C 1000UF 20% 25V | S | AA | AC |
| C 0757 | VCEA0A1EW108M | ELEC C 1000UF 20% 25V | S | AA | AC |
| C 0758 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| C 0760 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 0764 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| C 0766 | VCEA0A1EW476M | ELEC C 47UF 20% 25V | S | AA | AA |
| C 0767 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 0768 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| C 0769 | VCEA0A1HW106M | ELEC C 10UF 20% 50V | S | AA | AA |
| C 0771 | VCEA0A1EW476M | ELEC C 47UF 20% 25V | S | AA | AA |
| C 0772 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| C 0773 | VCEA0A1HW105M | ELEC C 1UF 20% 50V | S | AA | AA |
| C 0774 | VCE9EA1HW105M | E CAPACITOR 1UF 50V NP | S | AA | AA |
| C 0775 | VCEA0A1HW106M | ELEC C 10UF 20% 50V | S | AA | AA |
| C 0780 | VCKYCY1HF103Z | CHIP CAP 0.01UF/50V | S | AA | AA |
| C 1001 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1002 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1003 | VCEA0A1CW106M | ELEC C 10UF 20% 16V | S | AA | AA |
| C 1004 | VCEA0A1CW227M | E CAPACITOR 220UF 16V 6.3x11 | S | AA | AB |
| C 1005 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1006 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1007 | VCKYCY1HB222K | S CHIP CAPACITOR 0.0022UF/50V TAPED | S | AA | AA |
| C 1008 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1009 | VCKYCY1EF473Z | C CAPACITOR 0.047UF/25V TAPED | S | AA | AA |
| C 1010 | VCEA0A1HW106M | ELEC C 10UF 20% 50V | S | AA | AA |
| C 1011 | VCKYCY1HB271K | GRM39B 271K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1012 | VCKYCY1HB222K | S CHIP CAPACITOR 0.0022UF/50V TAPED | S | AA | AA |
| C 1013 | VCKYCY1CF474Z | GRM39F 474Z 16 (1608)SMD CAPACITOR | S | AA | AA |
| C 1014 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| C 1015 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1016 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1017 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1018 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1019 | VCKYCY1HB222K | S CHIP CAPACITOR 0.0022UF/50V TAPED | S | AA | AA |
| C 1020 | VCEA0A0JW477M | E CAPACITOR 470UF/6.3V 6.3X11 | S | AA | AA |
| C 1021 | VCKYCY1HB222K | S CHIP CAPACITOR 0.0022UF/50V TAPED | S | AA | AA |

| REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|
| C 1022 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1023 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| C 1024 | VCEA0A0JW477M | ELEC C 470UF 20% 6,3V | S | AA | AA |
| C 1025 | VCKYCY1HB222K | S CHIP CAPACITOR 0.0022UF/50V TAPED | S | AA | AA |
| C 1026 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1027 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1029 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1030 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1031 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1032 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 1034 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1035 | VCEA0A1CW477M | ELEC C 470UF 20% 16V | S | AA | AA |
| C 1036 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1037 | VCEA0A1HW335M | ELEC C 3,3UF 20% 50V | S | AA | AA |
| C 1038 | VCKYCY1CF474Z | GRM39F 474Z 16 (1608)SMD CAPACITOR | S | AA | AA |
| C 1039 | VCCCCY1HH3R0C | S C CAPACITOR (TAPED) | S | AA | AA |
| C 1040 | VCCCCY1HH5R0C | S. CAPACITOR TAPED | S | AA | AA |
| C 1041 | VCKYCY1CF474Z | GRM39F 474Z 16 (1608)SMD CAPACITOR | S | AA | AA |
| C 1042 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1043 | VCFYFA1HA684J | POL FILM C 680NF 5% 50V | S | AA | AB |
| C 1044 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1045 | VCE9EA1CW106M | E CAPACITOR 10UF 16V NP | S | AA | AA |
| C 1047 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1048 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1049 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1050 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1057 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| C 1058 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1059 | VCEA0A1AW477M | E.CAPACITOR 470UF 10V 6.3x11 | S | AA | AA |
| C 1060 | VCKYCY1HB103K | GRM39B 103K 50 (1608)SMD CAPACITOR | S | AA | AA |
| C 1061 | VCKYCY1HF103Z | CHIP CAP 0.01UF/50V | S | AA | AA |
| C 1065 | VCKYCY1HF103Z | CHIP CAP 0.01UF/50V | S | AA | AA |
| C 1067 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| C 1068 | VCKYTV1HF103Z | CERAM C 10NF 50V 2125SMD | S | AA | AA |
| C 1301 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1302 | VCEA0A1EW227M | ELEC C 220UF 20% 25V | S | AA | AA |
| C 1303 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1304 | VCKYTV1HF104Z | CERAM C 100NF 50V 2125SMD | S | AA | AA |
| C 1305 | VCKYCY1HB561K | S. CAPACITOR 560PF/50V | S | AA | AA |
| C 1306 | VCKYCY1HB472K | S.CHIP CAP 4700PF/50V T | S | AA | AA |
| C 1307 | VCFYFA1HA474J | FILM CAPACITOR 474 MAT | S | AA | AB |
| C 1308 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1309 | VCEA0A1EW227M | ELEC C 220UF 20% 25V | S | AA | AA |
| C 1310 | VCKYTV1HF104Z | CERAM C 100NF 50V 2125SMD | S | AA | AA |
| C 1311 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 1312 | VCKYCY1CF334Z | S. CHIP CAP. 0.33UF/16V TAPED | S | AA | AA |
| C 1313 | VCEA0A1HW475M | ELEC C 4,7UF 20% 50V | S | AA | AA |
| C 1314 | VCEA0A0JW337M | ELEC C 330UF 20% 6,3V | S | AA | AA |
| C 1315 | VCKYTV1HF104Z | CERAM C 100NF 50V 2125SMD | S | AA | AA |
| C 1320 | VCCCCY1HH101J | S. CHIP CAP 100PF/50V TAPED | S | AA | AA |
| C 1321 | VCEA0A1EW227M | ELEC C 220UF 20% 25V | S | AA | AA |
| C 1322 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1323 | VCEA0A1HW105M | ELEC C 1UF 20% 50V | S | AA | AA |
| C 1324 | VCKYTV1HF104Z | CERAM C 100NF 50V 2125SMD | S | AA | AA |
| C 1325 | VCKYCY1HB561K | S. CAPACITOR 560PF/50V | S | AA | AA |
| C 1326 | VCFYFA1HA474J | FILM CAPACITOR 474 MAT | S | AA | AB |
| C 1327 | VCKYCY1HB472K | S.CHIP CAP 4700PF/50V T | S | AA | AA |
| C 1328 | VCKYCY1EF104Z | S CHIP TAPE CAP 0.1UF/25V | S | AA | AA |
| C 1329 | VCEA0A1EW227M | ELEC C 220UF 20% 25V | S | AA | AA |
| C 1330 | VCKYTV1HF104Z | CERAM C 100NF 50V 2125SMD | S | AA | AA |
| C 1331 | VCEA0A1HW475M | ELEC C 4,7UF 20% 50V | S | AA | AA |
| C 1332 | VCKYCY1HB102K | S. CHIP CAP 0.001UF/50V | S | AA | AA |
| C 1333 | VCKYCY1CF334Z | S. CHIP CAP. 0.33UF/16V TAPED | S | AA | AA |
| C 1334 | VCKYTV1HF104Z | CERAM C 100NF 50V 2125SMD | S | AA | AA |
| C 1335 | VCKYCY1HF103Z | CHIP CAP 0.01UF/50V | S | AA | AA |
| | | **RESISTORS** | | | |
| R 0007 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0012 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0201 | VRD-RA2BE123J | RES 12KOHM 5% 1/8W | S | AA | AA |
| R 0202 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0203 | VRS-CY1JF681J | S. CHIP RES. 680-OHM TAPED | S | AA | AA |
| R 0204 | VRS-CY1JF473J | S. CHIP RES 47K-OHM TAPED | S | AA | AA |
| R 0205 | VRS-CY1JF823J | S. CHIP RES. 82K-OHM TAPED | S | AA | AA |
| R 0206 | VRD-RA2BE271J | RES 270 OHM 5% 1/8W | S | AA | AA |
| R 0207 | VRD-RA2BE271J | RES 270 OHM 5% 1/8W | S | AA | AA |
| R 0208 | VRD-RA2BE123J | RES 12KOHM 5% 1/8W | S | AA | AA |
| R 0209 | VRS-CY1JF562J | S. CHIP RES. 5.6K-OHM TAPED | S | AA | AA |
| R 0210 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |

| REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|
| R 0211 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| R 0212 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0213 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0214 | VRS-CY1JF681J | S. CHIP RES. 680-OHM TAPED | S | AA | AA |
| R 0215 | VRS-CY1JF331J | S CHIP RES TAPE 330 OHM | S | AA | AA |
| R 0216 | VRD-RA2HD330J | RES 33 OHM 5% 1/2W | S | AA | AA |
| R 0217 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |
| R 0218 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |
| R 0219 | VRS-CY1JF224J | S. CHIP RES. 220K-OHM TAPED | S | AA | AA |
| R 0220 | VRS-CY1JF684J | S. CHIP RES. 680K-OHM TAPED | S | AA | AA |
| R 0221 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |
| R 0222 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0223 | VRS-CY1JF682J | S. CHIP RES. 6.8 K OHM TAPED | S | AA | AA |
| R 0224 | VRS-CY1JF682J | S. CHIP RES. 6.8 K OHM TAPED | S | AA | AA |
| R 0237 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0238 | VRS-CY1JF392J | S. CHIP RES. 3.9K-OHM TAPED | S | AA | AA |
| R 0239 | VRS-CY1JF331J | S CHIP RES TAPE 330 OHM | S | AA | AA |
| R 0240 | VRS-CY1JF151J | S CHIP RES. 150-OHM TAPED | S | AA | AA |
| R 0241 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 0243 | VRD-RA2BE223J | RES 22KOHM 5% 1/8W | S | AA | AA |
| R 0246 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0247 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0248 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0301 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| R 0302 | VRS-CY1JF332J | S. CHIP RES. 3.3K-OHM TAPED | S | AA | AA |
| R 0303 | VRS-TQ2BD220J | OX RE 22 OHM 5% 1/8W SMD | S | AA | AA |
| R 0304 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 0305 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 0306 | VRS-CY1JF332J | S. CHIP RES. 3.3K-OHM TAPED | S | AA | AA |
| R 0307 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| R 0308 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 0309 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0310 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0311 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0312 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 0313 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0314 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 0315 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0316 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0317 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0318 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0319 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0320 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0321 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| R 0322 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0323 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0324 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| R 0325 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0326 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0330 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0331 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0332 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0333 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0335 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0336 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0337 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0338 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 0340 | VRD-RA2HD151J | RES 150 OHM 5% 1/2W | S | AA | AA |
| R 0341 | VRS-CY1JF272J | S. CHIP RES. 2.7K-OHM TAPED | S | AA | AA |
| R 0342 | VRD-RA2HD151J | RES 150 OHM 5% 1/2W | S | AA | AA |
| R 0343 | VRS-CY1JF272J | S. CHIP RES. 2.7K-OHM TAPED | S | AA | AA |
| R 0344 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 0345 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 0346 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0347 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0348 | VRS-VV3AB271J | MET OX RES 270 OHM 5% 1W | S | AA | AA |
| R 0349 | VRS-VV3AB271J | MET OX RES 270 OHM 5% 1W | S | AA | AA |
| R 0350 | VRS-CY1JF561J | S. CHIP RES 560-OHM TAPED | S | AA | AA |
| R 0351 | VRS-CY1JF561J | S. CHIP RES 560-OHM TAPED | S | AA | AA |
| R 0352 | VRS-CY1JF561J | S. CHIP RES 560-OHM TAPED | S | AA | AA |
| R 0353 | VRS-CY1JF561J | S. CHIP RES 560-OHM TAPED | S | AA | AA |
| R 0354 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 0355 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 0356 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 0357 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0358 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 0359 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 0370 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 0401 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | R 0402 | VRS-CY1JF822J | S. CHIP RES. 8.2K-OHM TAPED | S | AA | AA |
| | R 0403 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0404 | VRS-TQ2BD750J | OX RE 75 OHM 5% 1/8W SMD | S | AA | AA |
| | R 0405 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0406 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 0407 | VRS-TV1JD820J | 2125 82 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0408 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0409 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0410 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0411 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 0412 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 0413 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0414 | VRS-TQ2BD680J | OX RE 68 OHM 5% 1/8W SMD | S | AA | AA |
| | R 0415 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0416 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |
| | R 0417 | VRS-CY1JF822J | S. CHIP RES. 8.2K-OHM TAPED | S | AA | AA |
| | R 0420 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |
| | R 0421 | VRS-CY1JF822J | S. CHIP RES. 8.2K-OHM TAPED | S | AA | AA |
| | R 0422 | VRS-TQ2BD750J | OX RE 75 OHM 5% 1/8W SMD | S | AA | AA |
| | R 0423 | VRS-TV1JD750J | 2125 75 OHM 5% 1/10W SMD | S | AA | AA |
| | R 0424 | VRD-RA2EE220J | RES 22 OHM 5% 1/4W | S | AA | AA |
| | R 0425 | VRD-RA2EE220J | RES 22 OHM 5% 1/4W | S | AA | AA |
| | R 0426 | VRD-RA2EE220J | RES 22 OHM 5% 1/4W | S | AA | AA |
| | R 0428 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | R 0429 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | R 0430 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | R 0501 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | R 0503 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0504 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | R 0506 | VRS-CY1JF124J | S. CHIP RES. 120K-OHM (TAPED) | S | AA | AA |
| | R 0509 | VRN-GA2EB1R0J | MET FILM R 1 OHM 5% 1/4W | S | AA | AA |
| | R 0510 | VRS-CY1JF224J | S. CHIP RES. 220K-OHM TAPED | S | AA | AA |
| | R 0511 | VRS-CY1JF562J | S. CHIP RES. 5.6K-OHM TAPED | S | AA | AA |
| | R 0512 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0513 | VRS-CY1JF685J | RES 0603 6,8M0HM 5% 1/10W SMD | S | AA | AA |
| | R 0514 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0515 | VRS-CY1JF392J | S. CHIP RES. 3.9K-OHM TAPED | S | AA | AA |
| | R 0516 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| | R 0517 | VRS-CY1JF392J | S. CHIP RES. 3.9K-OHM TAPED | S | AA | AA |
| | R 0518 | VRD-RA2BE472J | RES 4,7KOHM 5% 1/8W | S | AA | AA |
| | R 0519 | VRS-CY1JF124J | S. CHIP RES. 120K-OHM (TAPED) | S | AA | AA |
| | R 0520 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| △ | R 0521 | VRG-RL2HB151J | FUS RES 150 OHM 5% 1/2W | S | AA | AB |
| | R 0522 | VRD-RA2HD102J | RES 1KOHM 5% 1/2W | S | AA | AA |
| | R 0523 | VRN-VV3AB1R0J | MET FILM R 1 OHM 5% 1W | S | AA | AA |
| | R 0524 | VRS-VV3DB151J | MET OX RES 150 OHM 5% 2W | S | AA | AA |
| | R 0525 | VRS-VV3DB221J | MET FILM R 220 OHM 5% 2W | S | AA | AB |
| | R 0526 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0527 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0601 | VRD-RA2BE151J | RES 150 OHM 5% 1/8W | S | AA | AA |
| | R 0602 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 0604 | VRS-KA3HG272J | MET OX RES 2,7KOHM 5% 5W | S | AA | AC |
| | R 0605 | VRS-VV3AB562J | MET OX RES 5,6KOHM 5% 1W | S | AA | AA |
| | R 0606 | VRW-KQ3NC3R3K | WOUND RES 3,3 OHM 10% 7W | S | AA | AD |
| | R 0607 | VRD-RA2HD150J | RES 15 OHM 5% 1/2W | S | AA | AA |
| | R 0608 | VRN-VV3ABR22J | MET FILM R .22 OHM 5% 1W | S | AB | AA |
| | R 0609 | VRN-VV3AB5R6J | MET FILM R 5.6 OHM 5% 1W | S | AA | AA |
| | R 0610 | VRS-KT3LB122J | MET OX RES 1,2KOHM 5% 3W | S | AA | AD |
| | R 0611 | VRS-VV3AB103J | MET OX RES 10KOHM 5% 1W | S | AA | AA |
| | R 0612 | VRN-GA2EB1R0J | MET FILM R 1 OHM 5% 1/4W | S | AA | AA |
| | R 0614 | VRN-SV2HCR22J | MET FILM R 0,22 OHM 5% 1/2W | S | AA | AA |
| | R 0616 | VRN-VV3DBR82J | MET FILM R .82 OHM 5% 2W | S | AA | AA |
| | R 0617 | VRN-VV3LB5R6J | MET FILM R 5.6 OHM 5% 3W | S | AA | AC |
| | R 0618 | VRS-VV3DB473J | MET OX RES 47K0HM 5% 2W | S | AB | AB |
| | R 0621 | VRD-RA2HD182J | RES 1,8KOHM 5% 1/2W | S | AA | AA |
| | R 0622 | VRD-RA2HD392J | RES 3,9KOHM 5% 1/2W | S | AA | AA |
| | R 0623 | VRD-RA2BE472J | RES 4,7KOHM 5% 1/8W | S | AA | AA |
| | R 0624 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 0625 | VRD-RA2HD822J | RES 8,2KOHM 5% 1/2W | S | AA | AA |
| | R 0626 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0627 | VRD-RA2EE124J | RES 120KOHM 5% 1/4W | S | AA | AA |
| | R 0703 | VRD-RA2HD154J | RES 150KOHM 5% 1/2W | S | AA | AA |
| | R 0706 | VRS-CY1JF124J | S. CHIP RES. 120K-OHM (TAPED) | S | AA | AA |
| | R 0707 | VRD-RA2HD154J | RES 150KOHM 5% 1/2W | S | AA | AA |
| | R 0708 | VRD-RA2HD270J | RES 27 OHM 5% 1/2W | S | AA | AA |
| | R 0709 | VRS-CY1JF184J | CHIP RESISTOR 180K | S | AA | AA |
| | R 0710 | VRD-RA2BE155J | RES 1,5MOHM 5% 1/8W | S | AA | AA |
| | R 0711 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0712 | VRD-RA2HD102J | RES 1KOHM 5% 1/2W | S | AA | AA |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | R 0713 | VRD-RA2BE333J | RES 33KOHM 5% 1/8W | S | AA | AA |
| | R 0714 | VRD-RA2BE155J | RES 1,5MOHM 5% 1/8W | S | AA | AA |
| | R 0715 | VRN-VV3DBR12J | MET FILM R 0,12 OHM 5% 2W | S | AA | AA |
| | R 0716 | VRD-RA2HD122J | RES 1.2KOHM 5% 1/2W | S | AA | AA |
| | R 0717 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0718 | VRW-KQ3HC5R6K | WOUND RES | S | AA | AB |
| | R 0719 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0720 | VRD-RA2HD103J | RES 10KOHM 5% 1/2W | S | AA | AA |
| | R 0721 | VRD-RA2HD102J | RES 1KOHM 5% 1/2W | S | AA | AA |
| | R 0722 | VRS-KT3LB473J | MET OX RES 47KOHM 5% 3W | S | AA | AD |
| | R 0723 | VRS-CY1JF222J | S. CHIP RES. 2.2K-OHM TAPED | S | AA | AA |
| | R 0724 | VRD-RA2BE100J | RES 10 OHM 5% 1/8W | S | AA | AA |
| | R 0725 | VRD-RA2HD272J | RES 2,7KOHM 5% 1/2W | S | AA | AA |
| △ | R 0727 | RR-HZA001WJZZ | R HIGH VOL 8M2 0,5W BC VR37 232224223825 | S | AA | AB |
| △ | R 0728 | RR-HZA001WJZZ | R HIGH VOL 8M2 0,5W BC VR37 232224223825 | S | AA | AB |
| | R 0742 | VRD-RA2HD470J | RES 47 OHM 5% 1/2W | S | AA | AA |
| | R 0743 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| | R 0744 | VRD-RA2EE102J | RES 1KOHM 5% 1/4W | S | AA | AA |
| | R 0746 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| | R 0747 | VRS-CY1JF222J | S. CHIP RES. 2.2K-OHM TAPED | S | AA | AA |
| | R 0748 | VRS-CY1JF334J | S. CHIP RES. 330K-OHM TAPED | S | AA | AA |
| | R 0749 | VRS-CY1JF222J | S. CHIP RES. 2.2K-OHM TAPED | S | AA | AA |
| | R 0750 | VRS-TQ2BD124F | RE OX 120KOHM 1% 1/8W SMD | S | AA | AA |
| | R 0751 | VRS-TQ2BD124F | RE OX 120KOHM 1% 1/8W SMD | S | AA | AA |
| | R 0752 | VRS-TQ2BD472F | OX RE 470 OHM 1% 1/8W SMD | S | AA | AA |
| | R 0753 | VRS-CY1JF393J | S.CHIP REG 39K-OHM T | S | AA | AA |
| | R 0754 | VRS-CY1JF183J | S. CHIP RES. 18K-OHM TAPED | S | AA | AA |
| | R 0755 | VRS-CY1JF562J | S. CHIP RES. 5.6K-OHM TAPED | S | AA | AA |
| | R 0756 | VRS-CY1JF123J | S CHIP RES. 12K-OHM TAPED | S | AA | AA |
| | R 0757 | VRS-CY1JF473J | S. CHIP RES 47K-OHM TAPED | S | AA | AA |
| | R 0758 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0759 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| | R 0761 | VRS-CY1JF122J | S. RESISTOR 1.2K OHM | S | AA | AA |
| | R 0762 | VRD-RA2EE680J | RES 68 OHM 5% 1/4W | S | AA | AA |
| | R 0763 | VRD-RA2HD102J | RES 1KOHM 5% 1/2W | S | AA | AA |
| | R 0764 | VRS-CY1JF822J | S. CHIP RES. 8.2K-OHM TAPED | S | AA | AA |
| | R 0765 | VRS-CY1JF182J | S CHIP RES 1.8K-OHM TAPED | S | AA | AA |
| | R 0766 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| | R 0767 | VRS-CY1JF682J | S. CHIP RES. 6.8 K OHM TAPED | S | AA | AA |
| | R 0768 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0769 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0770 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0771 | VRD-RA2BE153J | RES 15KOHM 5% 1/8W | S | AA | AA |
| | R 0774 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0775 | VRS-VV3DB220J | MET OX RES 22 OHM 5% 2W | S | AA | AA |
| | R 0776 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0778 | VRS-CY1JF332J | S. CHIP RES. 3.3K-OHM TAPED | S | AA | AA |
| | R 0781 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| | R 0783 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| | R 0785 | VRS-CY1JF123J | S CHIP RES. 12K-OHM TAPED | S | AA | AA |
| | R 0791 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 0792 | VRD-RA2HD101J | RES 100 OHM 5% 1/2W | S | AA | AA |
| | R 0793 | VRS-CY1JF563J | S. CHIP RES 560 OHM TAPED | S | AA | AA |
| | R 0794 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| | R 0795 | VRS-CY1JF393J | S.CHIP REG 39K-OHM T | S | AA | AA |
| | R 1001 | VRS-CY1JF100J | S CHIP RESISTOR 10 OHM | S | AA | AA |
| | R 1003 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | R 1004 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1005 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 1006 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 1007 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1008 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1009 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 1010 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1011 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1012 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1013 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1014 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1015 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1016 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1017 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1018 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1019 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1020 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1021 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1022 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1023 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1024 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| | R 1025 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |

| REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|
| R 1026 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1027 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1028 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1029 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1030 | VRS-CY1JF221J | S. CHIP RES. 220-OHM TAPED | S | AA | AA |
| R 1031 | VRS-CY1JF273J | S. CHIP RES. 27-OHM TAPED | S | AA | AA |
| R 1032 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| R 1033 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 1034 | VRS-CY1JF332J | S. CHIP RES. 3.3K-OHM TAPED | S | AA | AA |
| R 1035 | VRS-CY1JF332J | S. CHIP RES. 3.3K-OHM TAPED | S | AA | AA |
| R 1036 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1037 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1038 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 1039 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1040 | VRD-RA2BE332J | RES 3,3KOHM 5% 1/8W | S | AA | AA |
| R 1041 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 1043 | VRD-RA2BE680J | RES 68 OHM 5% 1/8W | S | AA | AA |
| R 1044 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 1045 | VRS-CY1JF222J | S. CHIP RES. 2.2K-OHM TAPED | S | AA | AA |
| R 1046 | VRD-RA2BE472J | RES 4,7KOHM 5% 1/8W | S | AA | AA |
| R 1047 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1049 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| R 1050 | VRS-CY1JF225J | S. CHIP RES. 2.2M OHM TAPED | S | AA | AA |
| R 1052 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 1053 | VRS-CY1JF222J | S. CHIP RES. 2.2K-OHM TAPED | S | AA | AA |
| R 1054 | VRS-CY1JF122J | S. RESISTOR 1.2K OHM | S | AA | AA |
| R 1055 | VRS-CY1JF271J | S.CHIP RESIS. 270OHM TAPED | S | AA | AA |
| R 1056 | VRS-CY1JF222J | S. CHIP RES. 2.2K-OHM TAPED | S | AA | AA |
| R 1057 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1058 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1059 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1060 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| R 1061 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| R 1062 | VRS-CY1JF100J | S CHIP RESISTOR 10 OHM | S | AA | AA |
| R 1063 | VRS-CY1JF100J | S CHIP RESISTOR 10 OHM | S | AA | AA |
| R 1065 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1067 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1068 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1069 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1070 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1071 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1072 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1073 | VRS-CY1JF473J | S. CHIP RES 47K-OHM TAPED | S | AA | AA |
| R 1074 | VRS-CY1JF393J | S.CHIP REG 39K-OHM T | S | AA | AA |
| R 1076 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 1077 | VRS-CY1JF822J | S. CHIP RES. 8.2K-OHM TAPED | S | AA | AA |
| R 1078 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |
| R 1081 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 1082 | VRS-CY1JF123J | S CHIP RES. 12K-OHM TAPED | S | AA | AA |
| R 1083 | VRS-CY1JF123J | S CHIP RES. 12K-OHM TAPED | S | AA | AA |
| R 1085 | VRD-RA2BE100J | RES 10 OHM 5% 1/8W | S | AA | AA |
| R 1087 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1088 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1089 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| R 1090 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1091 | VRS-CY1JF101J | S. CHIP RES. 100-OHM TAPED | S | AA | AA |
| R 1092 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 1093 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 1094 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| R 1301 | VRS-CY1JF123J | S CHIP RES. 12K-OHM TAPED | S | AA | AA |
| R 1302 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 1303 | VRS-CY1JF333J | S. CHIP RES. 33K-OHM TAPED | S | AA | AA |
| R 1304 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 1305 | VRD-RA2BE123J | RES 12KOHM 5% 1/8W | S | AA | AA |
| R 1306 | VRS-CY1JF151J | S CHIP RES. 150-OHM TAPED | S | AA | AA |
| R 1307 | VRD-RA2BE273J | RES 27KOHM 5% 1/8W | S | AA | AA |
| R 1308 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1309 | VRS-CY1JF123J | S CHIP RES. 12K-OHM TAPED | S | AA | AA |
| R 1310 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1311 | VRS-CY1JF103J | S.C. RESISTOR 10K OHM | S | AA | AA |
| R 1312 | VRS-CY1JF472J | S. RES. 4.7K OHM TAPED | S | AA | AA |
| R 1313 | VRS-CY1JF104J | S. CHIP RES. 100K-OHM TAPED | S | AA | AA |
| R 1314 | VRS-CY1JF151J | S CHIP RES. 150-OHM TAPED | S | AA | AA |
| R 1315 | VRS-CY1JF333J | S. CHIP RES. 33K-OHM TAPED | S | AA | AA |
| R 1316 | VRS-CY1JF273J | S. CHIP RES. 27-OHM TAPED | S | AA | AA |
| R 1317 | VRD-RA2BE223J | RES 22KOHM 5% 1/8W | S | AA | AA |
| R 1318 | VRS-CY1JF223J | S.CHOP REG 22K-OHM T | S | AA | AA |
| R 1319 | VRD-RA2BE123J | RES 12KOHM 5% 1/8W | S | AA | AA |
| R 1322 | VRS-CY1JF102J | S.CHIP RES TAPE 1K OHM | S | AA | AA |

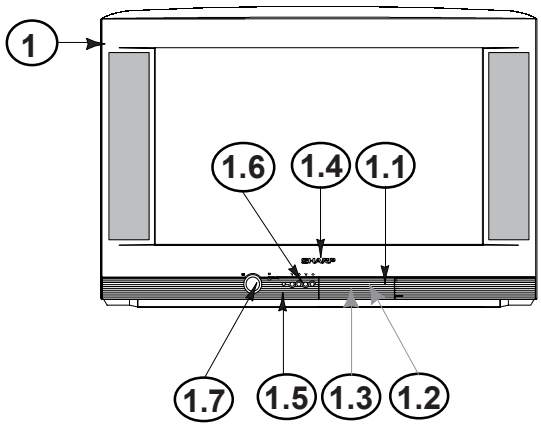
| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | | | **MISCELLANEOUS PARTS** | | | |
| | | PMLT-1038BM00 | SPACER 25X20X15 MM | S | AA | AC |
| | | QCNW-A417WJZZ | (PC) WIRE | S | AB | AE |
| | | QPWBFB217WJN5 | PWB CHASSIS GA-20 | S | AK | AW |
| | | XTASD30P10000 | SCREW | S | AA | AA |
| | FB 0303 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0304 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0305 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0401 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0402 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0404 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0405 | RBLN-0039TAZZ | FERRITE BLM21AJ401SN1D MURATA | S | AA | AB |
| | FB 0407 | RBLN-0039TAZZ | FERRITE BLM21AJ401SN1D MURATA | S | AA | AB |
| | FB 0501 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0502 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 0601 | RBLN-0047CEZZ | FERRITE FBA04VB900BB-00-A TAIYO | S | AA | AA |
| | FB 0602 | RBLN-0047CEZZ | FERRITE FBA04VB900BB-00-A TAIYO | S | AA | AA |
| | FB 0603 | RBLN-0020CEZZ | BALUNE | S | AA | AB |
| | FB 0701 | RBLN-0036CEZZ | BALUN | S | AA | AA |
| | FB 0751 | RBLN-0036CEZZ | BALUN | S | AA | AA |
| | FB 1001 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 1006 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 1007 | RBLN-0020CEZZ | BALUNE | S | AA | AB |
| | P 0601 | QPLGN0560CEZZ | CONNECTOR 5 PIN TV-50P-05-V2 A TAIKO | S | AA | AC |
| | P 0602 | QPLGN0741CEZZ | PLUG | S | AA | AA |
| | P 0603 | QTIPM0017CEFM | TIP | S | AA | AA |
| | P 0702 | QPLGN0260CEZZ | CONNECTOR 2 PIN TV-50P-02-V2 A TAIKO | S | AA | AA |
| | P 0703 | QPLGN0360CEZZ | CONNECTOR 3 PIN TV-50P-03-V2 A TAIKO | S | AA | AA |
| | P 1002 | QPLGN0841CEZZ | PLUG | S | AA | AA |
| | P 1003 | QPLGN0341CEZZ | PLUG | S | AA | AA |
| | P 1004 | QPLGN0941CEZZ | PLUG | S | AA | AB |
| | P 1005 | QPLGN0341CEZZ | PLUG | S | AA | AA |
| | P 1006 | QPLGN0341CEZZ | PLUG | S | AA | AA |
| | P 1301 | QPLGN0441CEZZ | PLUG 4PIN | S | AA | AA |
| | PR 0701 | RMPTP0001BMZZ | PTC B59250-C1080-B70 | S | AA | AD |
| | RJ 0002 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0003 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0004 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0005 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0006 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0008 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0009 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0010 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0011 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0012 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0013 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0014 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| | RJ 0015 | VRS-CY1JF000J | S. CHIP RES. 0-OHM TAPED | S | AA | AA |
| △ | RY 0701 | RRLYJ0090CEZZ | RELE G5PA-1-8 DV12V-A OMRON | S | AB | AF |
| | SC 0301 | QSOCZ2112BMZZ | TWIN SCART CHASSIS GA-10 | S | AD | AL |
| | SC 0302 | QSOCZ2107BMZZ | SOCKET | S | AF | AE |
| | SC 1001 | QSOCZ0115SC32 | SOCKET IC 32 PIN | S | AA | AB |
| | | LHLDW1019CEZZ | HOLDER CRDAR1540BMV7 | S | AA | AB |
| | | XTASD40P10000 | SCREW CRDAR1540BMV7 | S | AA | AA |
| | **PWB-B** | | **CRT UNIT** | | | |
| | | | **INTEGRATED CIRCUITS** | | | |
| | IC 0850 | RH-IX1833BMZZ | IC TDA6109 VIDEO AMPLIFIER 100Hz | S | AF | AR |
| | | | **TRANSISTORS** | | | |
| | Q 0851 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 0852 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0853 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0854 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 0855 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0856 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0857 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 0858 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0859 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 0860 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 1504 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 1505 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 1506 | VS2SA1837//-1 | TRT A1837 TOSHIBA | S | AB | AE |
| | Q 1507 | VS2SC4793//-1 | TRT C4793 TOSHIBA | S | AB | AE |
| | Q 1508 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 1509 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 1510 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |

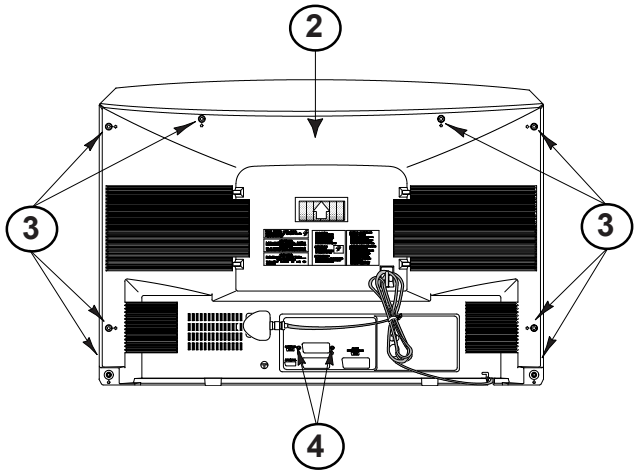
| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | | | **DIODES** | | | |
| | D 0850 | RH-DX0570BMZZ | DIODE 1N4004 ACPA | S | AA | AA |
| | D 0851 | RH-DX0570BMZZ | DIODE 1N4004 ACPA | S | AA | AA |
| | D 0852 | RH-DX0570BMZZ | DIODE 1N4004 ACPA | S | AA | AA |
| | D 0853 | RH-EX0619GEZZ | ZENER DIODE 6.2V B3 | S | AA | AA |
| | D 0854 | RH-EX0408BMZZ | ZENER DIODE BZX79C5V1 | S | AB | AB |
| | D 0863 | RH-DX0570BMZZ | DIODE 1N4004 ACPA | S | AA | AA |
| | D 1502 | RH-DX0045BMZZ | DIODE 1N4148 | S | AA | AA |
| | D 1503 | RH-DX0045BMZZ | DIODE 1N4148 | S | AA | AA |
| | D 1506 | RH-DX0487CEZZ | DIODE 1SR153-400T-31-A ROHM | S | AA | AB |
| | D 1507 | RH-DX0487CEZZ | DIODE 1SR153-400T-31-A ROHM | S | AA | AB |
| | D 1508 | RH-DX0045BMZZ | DIODE 1N4148 | S | AA | AA |
| | D 1515 | RH-EX0416BMZZ | ZENER DIODE BZX79C11V | S | AA | AB |
| | D 1518 | RH-EX0416BMZZ | ZENER DIODE BZX79C11V | S | AA | AB |
| | | | **CAPACITORS** | | | |
| | C 0850 | VCFYAA2EA104J | POL FILM C 100NF 5% 250V | S | AA | AC |
| | C 0851 | RC-KZ018JCEZZ | CERAM C 10NF 250V TDK | S | AA | AB |
| | C 0855 | VCEA0A2EW476M | ELEC C 47UF 20% 250V | S | AA | AD |
| | C 0865 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| | C 0866 | VCQYTA1HM104K | POL FILM C 100NF 10% 50V | S | AA | AA |
| | C 0868 | VCEA0A2EW106M | ELEC C 10UF 20% 250V | S | AA | AB |
| | C 0869 | VCFYAA2EA333K | POL FILM C 33NF 10% 250V | S | AC | AE |
| | C 0871 | VCFYAA2EA104J | POL FILM C 100NF 5% 250V | S | AA | AC |
| | C 1501 | VCEA0A1CW477M | ELEC C 470UF 20% 16V | S | AA | AA |
| | C 1504 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| | C 1506 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| | C 1508 | VCKYPA2HB472K | CERAM C 4,7NF 10% 500V | S | AA | AB |
| | C 1509 | VCKYPA2HB472K | CERAM C 4,7NF 10% 500V | S | AA | AB |
| | C 1511 | VCKYPA1HF103Z | C.CAPACITOR 0.01U-F 50V | S | AA | AA |
| | C 1515 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| | C 1516 | VCEA0A1CW476M | ELEC C 47UF 20% 16V | S | AA | AA |
| | C 1517 | VCEA0A2EW106M | ELEC C 10UF 20% 250V | S | AA | AB |
| | C 1518 | VCCSPA2HL560K | CERAM C 56PF 10% 500V | S | AA | AA |
| | C 1519 | VCEA0A2EW106M | ELEC C 10UF 20% 250V | S | AA | AB |
| | | | **RESISTORS** | | | |
| | R 0856 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 0857 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 0858 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0859 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 0860 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 0861 | VRD-RA2BE561J | RES 560 OHM 5% 1/8W | S | AA | AA |
| | R 0862 | VRC-MA2HG152K | SOLID R 1,5KOHM 10% 1/2W | S | AA | AB |
| | R 0863 | VRC-MA2HG152K | SOLID R 1,5KOHM 10% 1/2W | S | AA | AB |
| | R 0864 | VRC-MA2HG152K | SOLID R 1,5KOHM 10% 1/2W | S | AA | AB |
| | R 0867 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 0868 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 0869 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0870 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 0871 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 0872 | VRD-RA2BE561J | RES 560 OHM 5% 1/8W | S | AA | AA |
| | R 0873 | VRD-RA2HD224J | RES 220KOHM 5% 1/2W | S | AA | AA |
| | R 0874 | VRD-RA2HD225J | RES 2,2MOHM 5% 1/2W | S | AA | AA |
| | R 0876 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 0877 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 0878 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 0879 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 0880 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 0881 | VRD-RA2BE561J | RES 560 OHM 5% 1/8W | S | AA | AA |
| | R 0882 | VRD-RA2BE822J | RES 8,2KOHM 5% 1/8W | S | AA | AA |
| | R 0883 | VRD-RA2BE182J | RES 1,8KOHM 5% 1/8W | S | AA | AA |
| | R 0884 | VRD-RA2BE332J | RES 3,3KOHM 5% 1/8W | S | AA | AA |
| | R 0885 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| △ | R 0886 | RR-XZ0216BMZZ | FUS RES 22R TAP 5% 1/2W | S | AA | AB |
| | R 1507 | VRD-RA2HD391J | RES 390 OHM 5% 1/2W | S | AA | AA |
| | R 1508 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 1509 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 1510 | VRD-RA2BE331J | RES 330 OHM 5% 1/8W | S | AA | AA |
| | R 1511 | VRD-RA2BE560J | RES 56 OHM 5% 1/8W | S | AA | AA |
| | R 1512 | VRD-RA2BE330J | RES 33 OHM 5% 1/8W | S | AA | AA |
| | R 1513 | VRS-VV3LB152J | MET OX RES 1,5KOHM 5% 3W | S | AA | AB |
| | R 1514 | VRD-RA2BE100J | RES 10 OHM 5% 1/8W | S | AA | AA |
| | R 1515 | VRD-RA2BE820J | RES 82 OHM 5% 1/8W | S | AA | AA |
| | R 1516 | VRD-RA2BE820J | RES 82 OHM 5% 1/8W | S | AA | AA |
| | R 1517 | VRD-RA2BE122J | RES 1,2KOHM 5% 1/8W | S | AA | AA |
| | R 1518 | VRD-RA2BE683J | RES 68KOHM 5% 1/8W | S | AA | AA |
| | R 1519 | VRD-RA2BE123J | RES 12KOHM 5% 1/8W | S | AA | AA |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | R 1520 | VRD-RA2BE683J | RES 68KOHM 5% 1/8W | S | AA | AA |
| | R 1521 | VRD-RA2BE122J | RES 1,2KOHM 5% 1/8W | S | AA | AA |
| | R 1525 | VRD-RA2EE560J | RES 56 OHM 5% 1/4W | S | AA | AA |
| | R 1526 | VRD-RA2EE560J | RES 56 OHM 5% 1/4W | S | AA | AA |
| | R 1527 | VRD-RA2EE2R7J | RES 2,7 OHM 5% 1/4W | S | AA | AA |
| | R 1528 | VRD-RA2EE2R7J | RES 2,7 OHM 5% 1/4W | S | AA | AA |
| | R 1529 | VRS-VV3DB221J | MET FILM R 220 OHM 5% 2W | S | AA | AB |
| | R 1530 | VRD-RA2BE122J | RES 1,2KOHM 5% 1/8W | S | AA | AA |
| | | | **MISCELLANEOUS PARTS** | | | |
| | | QCNW-A327WJZZ | WIRE (H) 7 WAYS | S | AA | AD |
| | | QCNW-A328WJZZ | WIRE (K) 8 WAYS | S | AB | AD |
| | | QCNW-A423WJZZ | (PU) WIRE | S | AA | AE |
| | FB 0850 | RBLN-0037CEZZ | BALUN FBA04HA90088-00 T/Y | S | AB | AB |
| | FB 1501 | RBLN-0020CEZZ | BALUNE | S | AA | AB |
| | P 0852 | QPLGN0241CEZZ | PLUG | S | AA | AA |
| | P 0854 | QPLGN0741CEZZ | PLUG | S | AA | AA |
| | P 0855 | QPLGN0841CEZZ | PLUG | S | AA | AA |
| | P 0856 | QTIPM0017CEFM | TIP | S | AA | AA |
| | P 0858 | QTIPM0017CEFM | TIP | S | AA | AA |
| △ | SC 0850 | QSOCV0103BMZZ | SOCK HPS1521-014408 HOSHI | S | AD | AG |
| | **PWB-C** | | **CONTROL UNIT** | | | |
| | | | **INTEGRATED CIRCUITS** | | | |
| △ | IC 2001 | RH-FX0008GEZZ | P/COUPLER RANK-S SHARP | S | AA | AD |
| | | | **TRANSISTORS** | | | |
| | R 2001 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 2002 | VRD-RA2BE332J | RES 3,3KOHM 5% 1/8W | S | AA | AA |
| | R 2003 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2004 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 2005 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 2006 | VRD-RA2BE561J | RES 560 OHM 5% 1/8W | S | AA | AA |
| | R 2007 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 2008 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 2009 | VRD-RA2BE222J | RES 2,2KOHM 5% 1/8W | S | AA | AA |
| | R 2010 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 2011 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 2012 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 2020 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 2021 | VRD-RA2BE104J | RES 100KOHM 5% 1/8W | S | AA | AA |
| | R 2022 | VRD-RA2BE104J | RES 100KOHM 5% 1/8W | S | AA | AA |
| | R 2023 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2024 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2025 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2026 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2027 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2028 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2029 | VRD-RA2HD100J | RES 10 OHM 5% 1/2W | S | AA | AA |
| | R 2031 | VRD-RA2BE273J | RES 27KOHM 5% 1/8W | S | AA | AA |
| | R 2032 | VRD-RA2BE273J | RES 27KOHM 5% 1/8W | S | AA | AA |
| | R 2035 | VRD-RA2BE473J | RES 47KOHM 5% 1/8W | S | AA | AA |
| | R 2036 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 2037 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 2038 | VRD-RA2BE473J | RES 47KOHM 5% 1/8W | S | AA | AA |
| | R 2041 | VRD-RA2BE473J | RES 47KOHM 5% 1/8W | S | AA | AA |
| | R 2042 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2043 | VRD-RA2BE562J | RES 5,6KOHM 5% 1/8W | S | AA | AA |
| | R 2044 | VRD-RA2BE182J | RES 1,8KOHM 5% 1/8W | S | AA | AA |
| | R 2047 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 2048 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | | | **DIODES** | | | |
| | D 2008 | RH-DX0045BMZZ | DIODE 1N4148 | S | AA | AA |
| | D 2009 | RH-DX0571BMZZ | DIODE 1N4005 ACPA | S | AA | AA |
| | D 2011 | RH-PX0105BMZZ | LED SPB-25MVW ROHM | S | AC | AC |
| | | | **CAPACITORS** | | | |
| | C 2003 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| | C 2005 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| | C 2007 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| | C 2008 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| | C 2009 | VCKYPA1HB102K | C.CAPACITOR 1000PF/50V | S | AA | AA |
| | C 2010 | VCEA0A1CW107M | ELEC C 100UF 20% 16V | S | AA | AA |
| △ | C 2011 | RC-FZ0219BMZZ | C 470NF 275V X2 B81130-C1474-M SIEMENS | S | AA | AD |
| | C 2012 | VCEA0A1CW226M | ELEC C 22UF 20% 16V | S | AA | AA |
| | | | **RESISTORS** | | | |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | R 2001 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 2002 | VRD-RA2BE332J | RES 3,3KOHM 5% 1/8W | S | AA | AA |
| | R 2003 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2004 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 2005 | VRD-RA2BE391J | RES 390 OHM 5% 1/8W | S | AA | AA |
| | R 2006 | VRD-RA2BE561J | RES 560 OHM 5% 1/8W | S | AA | AA |
| | R 2007 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 2008 | VRD-RA2BE102J | RES 1KOHM 5% 1/8W | S | AA | AA |
| | R 2009 | VRD-RA2BE222J | RES 2,2KOHM 5% 1/8W | S | AA | AA |
| | R 2010 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 2011 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 2012 | VRD-RA2BE101J | RES 100 OHM 5% 1/8W | S | AA | AA |
| | R 2020 | VRD-RA2BE750J | RES 75 OHM 5% 1/8W | S | AA | AA |
| | R 2021 | VRD-RA2BE104J | RES 100KOHM 5% 1/8W | S | AA | AA |
| | R 2022 | VRD-RA2BE104J | RES 100KOHM 5% 1/8W | S | AA | AA |
| | R 2023 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2024 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2025 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2026 | VRD-RA2HD473J | RES 47KOHM 5% 1/2W | S | AA | AA |
| | R 2027 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2028 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2029 | VRD-RA2HD100J | RES 10 OHM 5% 1/2W | S | AA | AA |
| | R 2031 | VRD-RA2BE273J | RES 27KOHM 5% 1/8W | S | AA | AA |
| | R 2032 | VRD-RA2BE273J | RES 27KOHM 5% 1/8W | S | AA | AA |
| | R 2035 | VRD-RA2BE473J | RES 47KOHM 5% 1/8W | S | AA | AA |
| | R 2036 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 2037 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 2038 | VRD-RA2BE473J | RES 47KOHM 5% 1/8W | S | AA | AA |
| | R 2041 | VRD-RA2BE473J | RES 47KOHM 5% 1/8W | S | AA | AA |
| | R 2042 | VRD-RA2BE103J | RES 10KOHM 5% 1/8W | S | AA | AA |
| | R 2043 | VRD-RA2BE562J | RES 5,6KOHM 5% 1/8W | S | AA | AA |
| | R 2044 | VRD-RA2BE182J | RES 1,8KOHM 5% 1/8W | S | AA | AA |
| | R 2047 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | R 2048 | VRD-RA2BE221J | RES 220 OHM 5% 1/8W | S | AA | AA |
| | | | **COILS** | | | |
| | L 2001 | VP-XF3R3K0000 | PEAK COIL 3.3UH 10% 1/8W | S | AA | AB |
| | L 2003 | VP-XF3R3K0000 | PEAK COIL 3.3UH 10% 1/8W | S | AA | AB |
| | L 2004 | VP-XF3R3K0000 | PEAK COIL 3.3UH 10% 1/8W | S | AA | AB |
| △ | L 2005 | RCILF0108BMZZ | COIL 472839.00 THOMSON | S | AF | AL |
| | | | **MISCELLANEOUS PARTS** | | | |
| | | GCOVA1512BMSA | DECORATION | S | AA | AB |
| | | LHLDF1527BMZZ | CONECTION HOLDER | S | AC | AG |
| | | LHLDW1019CEZZ | HOLDER | S | AA | AB |
| | | QCNW-A329WJZZ | WIRE (PA) 8 VIAS | S | AC | AG |
| | | QCNW-A330WJZZ | WIRE (PB) 3 WAYS | S | AC | AH |
| | | QCNW-A331WJZZ | WIRE (AA) 2 WAYS | S | AB | AE |
| | | QCNW-A418WJZZ | (PD) WIRE | S | AB | AE |
| △ | F 2001 | QFS-C3229CEZZ | FUSE S506-3.15A-A1 TOKYO COMPONENTS | S | AA | AC |
| | FH 0001 | QFSHD1001BMZZ | FUSE HOLD.EYF52BC=PANASON | S | AA | AA |
| | FH 0002 | QFSHD1002BMZZ | FUSE HOLD.EYF52BC=PANASON | S | AA | AA |
| | J 2001 | QJAKZ0015CEZZ | JACK | S | AH | AM |
| | J 2002 | QJAKJ0101SEZZ | MINIATURE PHONE JACK MORNING STAR | S | AA | AD |
| | P 2001 | QPLGN0341CEZZ | PLUG | S | AA | AA |
| | P 2002 | QPLGN0941CEZZ | PLUG | S | AA | AB |
| | P 2003 | QPLGN0641CEZZ | PLUG | S | AA | AA |
| | P 2005 | QPLGN0360CEZZ | CONNECTOR 3 PIN TV-50P-03-V2 A TAIKO | S | AA | AA |
| | P 2006 | QPLGN0260CEZZ | CONNECTOR 2 PIN TV-50P-02-V2 A TAIKO | S | AA | AA |
| | Q 2001 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | Q 2002 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 2003 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 2005 | VS2SA1266-Y-1 | TRT 2SA1266 KEC | S | AA | AA |
| | Q 2006 | VS2SC3198-Y-1 | TRT 2SC3198(AT) KOREA | S | AA | AA |
| | RMC2001 | RRMCUA004WJZZ | RECEPTOR M/D TSOP1738. VISHAY | S | AB | AG |
| | S 2001 | QSW-K0079GEZZ | TACTILE SWITCH | S | AA | AA |
| | S 2002 | QSW-K0079GEZZ | TACTILE SWITCH | S | AA | AA |
| | S 2003 | QSW-K0079GEZZ | TACTILE SWITCH | S | AA | AA |
| | S 2004 | QSW-K0079GEZZ | TACTILE SWITCH | S | AA | AA |
| △ | S 2005 | QSW-P0591CEZZ | SWITCH SDDFC3-A ALPS | S | AD | AL |
| | VA 2001 | RH-VX0047CEZZ | VARISTOR SIOV-S14K420M4 MATSUSHITA | S | AA | AC |
| | | | **MISCELLANEOUS PARTS** | | | |
| | | CSOCN0661BMV0 | CABLE SET (F) THOMSON SF CRT | S | AC | AH |
| | | LHLDW1009CEZZ | HOLDER | S | AA | AA |
| | | LHLDW1033CE00 | HOLDER | S | AA | AA |
| | | LHLDW1060CEZZ | HOLDER | S | AA | AA |
| | | LHLDZ1714BMZZ | HOLDER ANODE CAP | S | AA | AA |
| △ | | QACCZ2100BMSA | AC CORD | S | AH | AR |

| | REF No. | PARTS | DESCRIPTION | * | SN CODE | EX CODE |
|---|---|---|---|---|---|---|
| | | QCNW-2862BMZZ | WIRE SPEAKERS FOR 32" FLAT | S | AC | AG |
| | | RRMCG1073BMSA | R/C FLAT 50HZ MODEL HOSHIDEN | S | AK | AW |
| | | SPAKP2014BMZZ | CEL-AIR WRAPPER 32" | S | AE | AH |
| | | UBATU0013TAZZ | BATTERY R6(X2) TOSHIBA | S | AB | AF |
| | | VSP1206PB617A | SPAEAKER 7 OHM 12x6CM SEA TRADE ELECTRON | S | AE | AN |
| | | XTASD30P10000 | SCREW | S | AA | AA |
| | | XTASD40P16000 | SCREN | S | AA | AA |
| | | SPAKC5497BMZZ | PACK-CASE 32" | S | AR | BB |
| | | SPAKX4079BMZZ | CUSHION | S | AM | AY |
| | | LCHSM1011BMKA | CHASSIS FRAME V0 DSETUB217BMV4 | S | AE | AP |
| | | LHLDW1002GEZZ | HOLDER DSETUB217BMV4 | S | AA | AB |
| | | LHLDW1033CE00 | HOLDER DSETUB217BMV4 | S | AA | AA |
| | | XTASD30P10000 | SCREW DSETUB217BMV4 | S | AA | AA |
| | | TMAN-3661BMN2 | SERV. MANUAL / GUARANTEE 32JW73EES | S | AA | AC |
| | | | **OWNERS MANUAL** | | | |
| | | TINS-7225BMN0 | OWNERS MANUAL | S | AF | AR |
| | | TINS-A200WJN0 | OWNERS MANUAL 32JW73EES | S | AF | AR |
| | | TINS-A201WJN0 | OWNERS MANUAL 32JW73ESE | S | AL | AW |
| | | | **CABINET PARTS** | | | |
| △ | 1 | CCABA1363BMV0 | CABINET SET 32HW53H | S | AZ | BN |
| | 1.1 | GDORF1063BMSA | DOOR | S | AA | AE |
| | 1.2 | PKAI-1083BM00 | DOOR RATCH | S | AC | AF |
| | 1.3 | HINDP5122BMSA | INDICATOR | S | AA | AE |
| | 1.4 | HBDGB3141CESA | SHARP BADGE | S | AB | AG |
| | 1.5 | HDECQ0067BMSA | DECORATION | S | AA | AC |
| | 1.6 | JBTN-1080BMSA | UP/DOWN BUTTON | S | AA | AD |
| | 1.7 | JBTN-1079BMSA | POWER BUTTON | S | AA | AC |
| △ | 2 | GCABB1130BMKA | REAR CABINET | S | AX | BK |
| | 3 | XTASB40P20000 | SCREW | S | AA | AA |
| | 4 | XTBSB30P13000 | SCREW | S | AA | AA |



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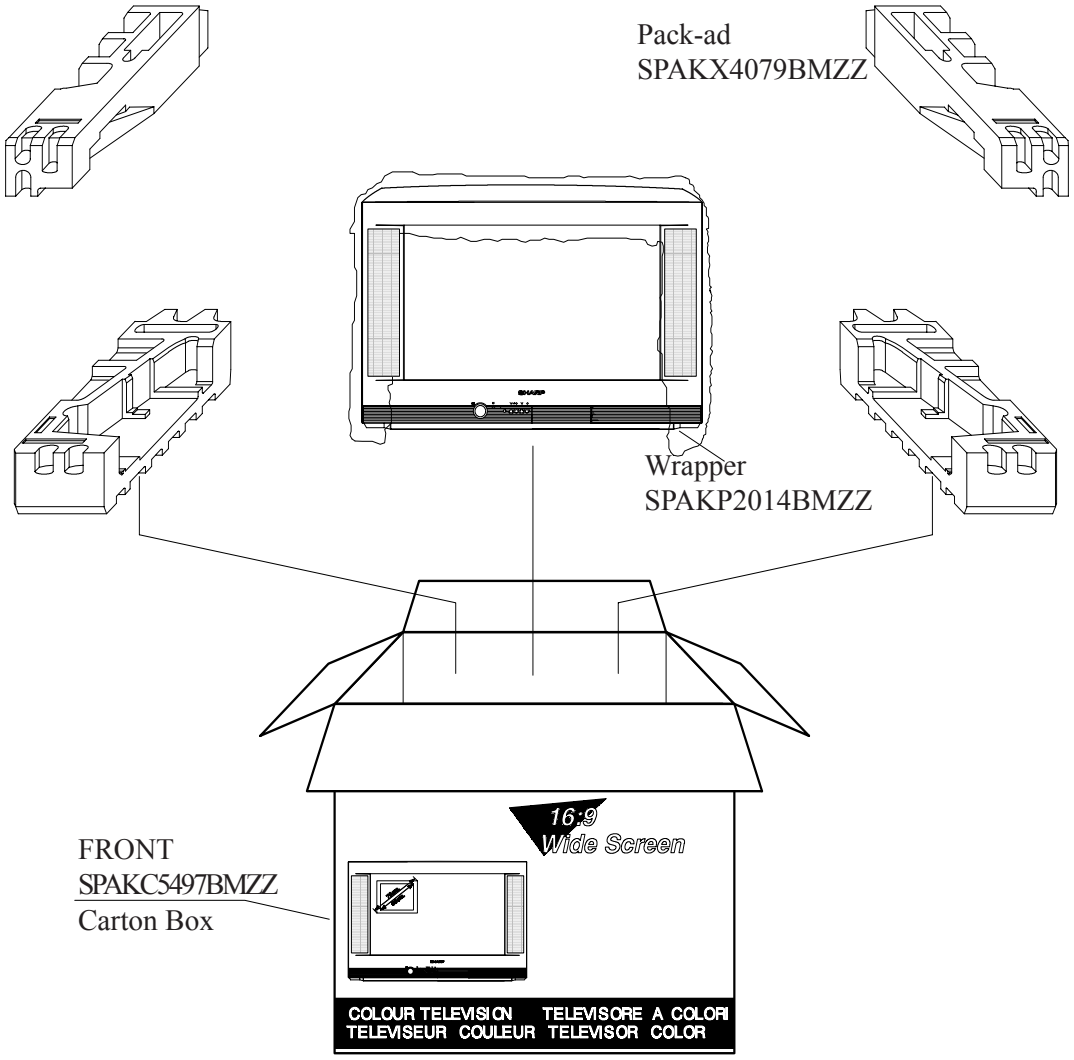
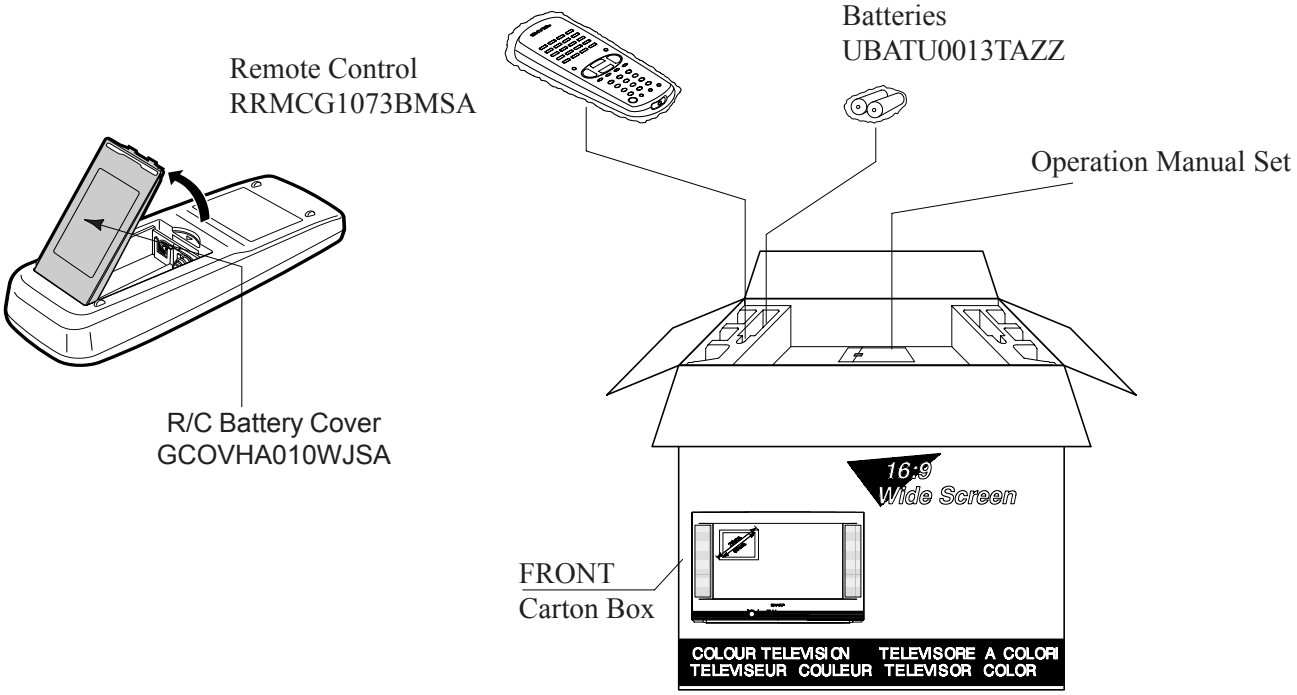
# PACKING OF THE SET & ACCESSORIES



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